

Control #: D4-100N-0012

FACILITY STATUS CHANGE FORM

November 6, 2006.

6. E-mail, James Crocker, Subject: 163-N and 183-N Soils Inspection- Ready to Backfill, CCN 138172

7. Sampling Determination Form for the 163-N, 183-N, -NA, -NB, and -NC Facilities (SDF-100N-002). Includes Washington Closure Hanford Meeting Minutes, 183N, 163N Demo and Disposition Meeting, October 2, 2006 (CCN 130293).

Rudy Guercia

DOE-RL

Nina Menard

Lead Regulator

☐

EPA

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Ecology

Date

Date

6/19/12

6/20/12

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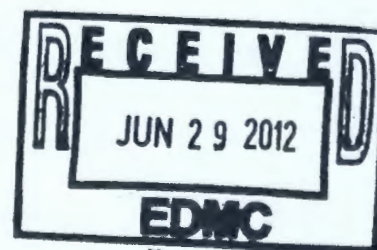
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FR Engineering: Rich Carlson, N3-30

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FACILITY STATUS CHANGE FORM

Date Submitted: May 14, 2012	Area: 100-N	Control #: D4-100N-0012
Originator: David Warren	Facility ID: 163-N/183-N, NA, NB, NC	
Phone: 539-6040	Action Memorandum: 100-N Ancillary Facilities	

This form documents agreement among the parties listed below on the status of the facility D&D operations and the disposition of underlying soil in accordance with the applicable regulatory decision documents.

Section 1: Facility Status

- ☒ All D4 operations required by action memo complete.
- ☐ D4 operations required by action memo partially complete, remaining operations deferred.

Description of Completed Activities and Current Conditions:

Deactivation: Utility isolations were performed on the facility prior to beginning facility decontamination. A small portion (~ 2 feet) of the fire line could not be isolated prior to demolition. Post demolition, this section of fire line has since been removed.

Decontamination and Decommissioning: The following hazardous material were removed prior to facility demolition: batteries, light bulbs, oils, grease, asbestos-containing material, mercury, refrigerant and polychlorinated biphenyls. Light bulbs in the 163-N Highbay that were inaccessible were left in place and removed during demolition. Asbestos containing Thermal System Insulation (TSI) (Class II non-friable cork mastic on the tanks) in the 163-N High Bay was left on the tanks during decontamination. The tanks with cork mastic insulation left intact, were removed during demolition with asbestos controls in place. Hazardous material removal and waste disposition was performed in accordance with *Removal Action Work Plan for 100-N Ancillary Facilities*, DOE/RL-2002-70, Revision 2 (RAWP). Fixative was applied to the inside of the 183-N Building alum tanks to lock down any remaining contamination [e.g., Naturally Occurring Radioactive Material (NORM) or Technically Enhanced Naturally Occurring Radioactive Material (TENORM)]. Refer to Attachment 1 for detailed discussion.

Demolition: Demolition of the above-grade structure for the 163-N was complete in October 2006. Below-grade demolition was complete in February 2008. Loadout and backfill was complete in April 2008. Demolition of the above-grade structure for the 183-N, NA, NB and NC was complete in September 2006. Below-grade demolition was complete in November 2007. Note, portions of the below-grade structure of both the 163-N and 183-N were left in place consistent with discussions held with the lead regulatory agency on October 2, 2006 (Refer to Attachment 7). The discussions also addressed specific details associated with the removal of 163-N Sump #1. The concrete stem wall that was part of the foundation of the 163-N and 183-N Service Bay was removed to 3 feet below grade and the remainder left in place. In addition, portions of the 183-N Filter Flume, 183-NB Clearwell, and 183-NC Filter Backwash Sump were removed to 3 feet below grade and the remainder of the structures were left in place. The 183-NC Filter Backwash sump was backfilled with the clean concrete rubble from the above grade section. Loadout and backfill was complete in March 2008.

Due to the fact that NORM and/or TENORM was left in place, the demolitions were performed under radiological controls. In addition, due to the fact that TSI cork mastic was left in place in the 163-N, asbestos controls were in place during demolition of the 163-N. The contaminants of concern during demolition were radionuclides, metals, and asbestos (Class II non-friable). Although not part of the 183-NA, but within the building footprint, one vertical water pipe connected to the west end of the 183-NA was left in place (see photographs in Attachments 3 and 6). This line was pressurized and tied to the main water feed line for 100-N. Removal of the line was completed after deactivation of the 100-N main export water line, it was performed by FR during removal of the 100-N-61 (raw water line) and various other pipelines adjacent the 183-NA facility. Visual inspection of the 163-N/183-N excavation and surrounding areas yielded no evidence of soil staining or anomalies.

Description of Deferral (as applicable):

163-N Sump #2 was left in place due to the fact that removal during demolition had the potential to cause structural

FACILITY STATUS CHANGE FORM

damage to the 186-N, at that time an active facility that supplied potable water for the 100 Areas. This information was shared with the lead regulatory agency in a meeting dated October 2, 2006 (CCN 130293). Refer to Attachment 6 for further details. Sump #2 was not included in the above grade demolition of the 186-N Building in September 2011 as was discussed in the meeting, but was removed by Field Remediation in October of that same year during removal of 100-N-61:3 piping. This information will be provided to the Stewardship Information System (SIS) Point of Contact for retention and tracking.

Section 2: Underlying Soil Status

- ☒ No waste site(s) present. No additional actions anticipated.
- ☐ Documented waste site(s) present. Cleanup and closeout to be addressed under Record of Decision.
- ☐ Potential waste site discovered during D4 operations. Waste site identification number <to be> assigned.
- Cleanup and closeout to be addressed under Record of Decision.

Description of Current/As-Left Conditions:

Visual inspection of the 163-N/183-N excavation and surrounding areas yielded no evidence of soil staining or anomalies. The excavation area was surveyed by Global Positioning Environmental Radiological Surveys (GPERS). The results of the survey and inspection supported the conclusion that sampling was not required. The site has been backfilled to grade with material from the 100-N borrow pit.

The Sampling Determination Form (Attachment 7) is part of a process implemented by the *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70, Revision 3. The Sampling Determination Form for the 163-N/183-N Facilities (SDF-100N-002) represents a regulatory agreement between DOE and the Lead Regulator (Ecology), and indicates that the requirements of the Action Memorandum have been met with respect to demonstrating that cleanup criteria, MTCA Method B for Chemical Constituents and 15 mRem above Hanford Site background for Radiological Constituents, have been achieved for soils and structures remaining after facility removal. Further action will not be required by the D4 organization to demonstrate that cleanup criteria have been met for the 163-N/183-N Facilities.

Identification of Documented Waste Site(s) or Nature of Potential Waste Site Discovery (as applicable):

Although no waste sites were directly under the structures demolished, the waste sites below were near the 163-N/183-N. Status of any impacts to the waste sites are discussed below.

120-N-3: 163-N Neutralization Pit and French Drain. The 163-N Neutralization Pit measures 10.2 meters by 2.8 meters and is 2.4 meters deep. The french drain is located in the pit. This site was not impacted by D4 activities. This waste site will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD.

120-N-5: 108-N/163-N Transfer Line and Neutralization Pit. This waste site was rejected by the Tri-Parties.

120-N-8: 163-N Sulfuric Acid Tank Vent French Drain. This waste site was rejected by the Tri-Parties.

124-N-1: 124-N-01 Septic Tank, 100-N Sanitary Sewer System No. 1. This septic tank and seepage pit is located south of the 163-N and north of the 183-NB Clearwells. The cover to the septic tank was inadvertently impacted by a blade grading the area around the tank leaving an open hole. The hole was filled with dirt for safety reasons. Refer to Attachment 5 for details.

UPR-100-N-34: 108-N Tank Transfer, Sulfuric Acid Line Break, UN-100-N-34. This waste site was rejected by the Tri-Parties.

100-N-9: 120-N-5 Facility Liquid Unplanned Release 1 (08/07/87). This waste site was rejected by the Tri-Parties.

100-N-10: 120-N-5 Facility Liquid Unplanned Release 2 (09/02/87). This waste site was rejected by the Tri-Parties.

100-N-11: 120-N-5 Transfer Trench Liquid Unplanned Release 3. This waste site was rejected by the Tri-Parties.

100-N-23: Resin Disposal Pit Liquid Waste Site 1. This site was not impacted by D4 activities. This waste site will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD.

Section 3: List of Attachments

1. Facility Information - Building History and Characterization.
2. Global Positioning Environmental Radiological Surveys (GPERS)
3. Project Photographs
4. Civil Survey Information
5. E-mail, Steve E. Killoy to ^WCH Document Control, Regulatory Decision Cron # Request -- 124-N-1 Cess Pool,

D4 Project Facility Completion Form

Attachment 1: Facility Information (7pages)

Facility Information

Introduction

This document provides information regarding the 163-N, 183-N, 183-NA, 183-NB, and 183-NC facilities history, characterization and final status at the completion of deactivation, decontamination, decommissioning and demolition (D4) activities.

Site Information

The 163-N Water Demineralization Plant was located on the south side of the 105 N Reactor building, approximately 750 feet from the Columbia River. 163-N shared a common wall with 183-N on the east side. This single story facility constructed in 1964 was steel framed, with corrugated metal siding on a reinforced concrete foundation. The building footprint measured 92 ft by 100 ft. The purpose of this facility was to de-mineralize and de-gas filtered water from the 183-N Water Filter Plant for eventual use as reactor coolant. From 163-N the water was stored in the 1900-N Demineralization Tank (1 Mgal storage tank). The building also housed auxiliary equipment to regenerate ion exchange resins for the demineralization process and stored the chemicals necessary to do so. Those components included a sodium hydroxide storage tank, an acid storage tank, cation and anion tanks, and a large retention basin. Sump number 1 was also associated with this facility. 163-N was partially deactivated in 1995.

The 183-N Water Filter Plant was single-story facility, with concrete masonry and steel siding on a reinforced concrete foundation, that was constructed in 1964. The building footprint was approximately 202 ft by 100 ft. The purpose of this facility was to pre-treat the raw water feed by coagulating, settling, filtrating, and distributing the drinking water and feed to the 163-N Facility. The principal components of the plant included the chemical mixing tank (where alum, chlorine, and a coagulation aid were added to the raw water), two coagulator settling basins, and six gravity flow sand filters.

The 183-NA Pump House was located on the east side of 183-N. It was a single-story, concrete masonry building with a reinforced-concrete panel roof measuring 66 ft by 33 ft. The purpose of this facility was to house the 100-N process water pumps.

The 183-NB Clearwell was a rectangular, mostly below grade structure made of reinforced concrete approximately 120 ft long by 40 ft wide by 12 ft deep. The top surface protruded approximately 1 ft above grade. The 183-NB Clearwell held the filtered water before it was distributed to various systems and facilities. Several pumps and associated control equipment were mounted on top of the concrete surface.

The 183-NC Filter Backwash Sump was a 27.7 ft by 27.7 ft sump built of reinforced-concrete with the top surface protruding approximately 3 ft above grade. The facility was used to collect backwash water from the 183-N sand filter beds.

Radiological and Industrial Hygiene Baseline Surveys

Radiological scoping and Industrial Hygiene baseline surveys were performed on the 163-N and 183-N complex facilities prior to demolition. The radiological scoping surveys are documented in survey numbers RSR-IFSM-05-0193, and RSR-IFSM-05-0201. Fixed contamination was found on scale of the mixer paddles associated with the 163-N elementary neutralization unit (a vessel contained in the building). Levels reported were 230 dpm/100 cm² alpha and 8,500 dpm/100 cm² beta-gamma. Fixed contamination was discovered inside the alum tanks, and on the floor around the alum tanks at the 183-N. Levels reported were 1,345 dpm/100 cm² alpha, and 70,000 dpm/100 cm² beta-gamma inside the alum tank, and 85 dpm/100 cm² alpha, and 6,000 dpm/100 cm² beta-gamma on the floor under and around the alum tank. Removable contamination was discovered inside the alum tanks at levels of 85 dpm/100 cm² alpha and 50,000 dpm/100 cm² beta-gamma. All contamination was associated with NORM/TEMORM constituents. Any removable contamination was fixed prior to building demolition. See Table 1 for a summary of radiological and industrial hygiene scoping surveys.

Table 1. Summary of Scoping Surveys

Type	Quantity	Method Detection Limits	Results
Radiological Scoping Surveys	> 500 surveys taken. (Each surveyed area included multiple sample locations and consisted of technical smears and direct readings).	Alpha – 20 removable / 100 fixed (dpm/100cm ²) Beta-gamma – 1,000 removable / 5,000 fixed (dpm/100cm ²) Alpha – 20 removable / 500 fixed (dpm/100cm ²) Beta-gamma – 1,000 removable / 5,000 fixed (dpm/100cm ²) Alpha – 100 fixed (dpm/100cm ²) Beta-gamma – 1,000 removable / 5,000 fixed (dpm/100cm ²)	See Above.
Industrial Hygiene Scoping Surveys	7 Surveys	IH Surveys were for atmospheric hazards (Confined Space monitoring, etc.) Direct reading equipment detection levels vary.	No readings outside of normal parameters were noted. No evidence of spills or any anomalies were noted during these activities.

Post Demolition Radiological Surveys

Post demolition Global Positioning Environmental Radiological Surveyor (GPERS) surveys showed no radiological contamination with the exception of one elevated hot spot. During GPERS of the 183-N, the beta GPERS survey showed a single point significantly exceeding 10 times the background radiation level. The spot was immediately re-measured during the survey and could not be re-located, and was therefore determined to be a false reading. A GPERS survey was not performed on the 183-NB Clearwell due to safety concerns related to entering the structure in and to process knowledge indicating the contamination was not expected (refer to meeting minutes in Attachment 6). Visual examination showed no unusual staining inside this structure. See Table 2 for a summary of Post Demolition Radiological Surveys. A copy of the survey maps is provided in Attachment 2.

Table 2. Summary of Post Demolition Surveys

Type	Quantity	Method Detection Limits	Results
Radiological Surveys, In Process and Post Demolition	6. (Each surveys included multiple sample locations that consisted of technical smears and direct readings.)	Alpha – 20 removable / 100 fixed (dpm/100cm ²) Beta-gamma – 1,000 removable / 5,000 fixed (dpm/100cm ²) Alpha – 20 removable / 500 fixed (dpm/100cm ²) Beta-gamma – 1,000 removable / 5,000 fixed (dpm/100cm ²) Alpha – 100 fixed (dpm/100cm ²) Beta-gamma – 1,000 removable / 5,000 fixed (dpm/100cm ²)	All results were below method detection limits.
Global Positioning Environmental Radiological Surveys	4 surveys	N/A	All results were less than two times background. It should be noted that readings that are under two times the background count are considered insignificant. (See Attachment 2)
^a – dpm/100 cm ²			

D4 Project Facility Completion Form

Facility & Waste Characterization Sampling

A complete list of all the characterization samples taken during D4 activities at these buildings is included in Table 3. 108 asbestos samples were collected from items inside or outside of 163-N/183-N and associated buildings. With the exception of the cork mastic on the tanks in the 163-N High Bay, all asbestos was removed from the buildings prior to demolition. Asbestos controls were implemented during demolition involving these tanks. A complete list of Asbestos Characterization Samples is included in Table 4. The *100-N Ancillary Facilities Waste Characterization Sampling and Analysis Plan*, and the *100-N Area Sampling and Analysis Plan for CERCLA Waste Sites*, were both used as guidance during the characterization and D4 activities involved with these structures.

Table 3. Summary of Characterization Samples

Type	Quantity	Results	HEIS #
Hazardous Materials – Waste Characterization	73	Samples were taken during characterization (or samples from facilities of similar construction and similar waste types were used to profile waste) to ensure the requirements of the ERDF Waste Acceptance Criteria were met.	163-N: B10D77, B10D78, B12V19, J01J85, B0P743, J03NC0 through J03NC2, J03CR2, J01J90, J01JL9, B0VLW9, B0L213, B0YWL4, FT5011-01 through FT5011-21, J107C0, J108C0 through J108C3, J10CT6, J10CV7, J11L91, J12WW, J14BJ5, J14BJ7, J14KF8 183-N: B0YWL4, B0VLW9, J01HL9, J01J85, J022F7, J01J86, B0P6Y7, J03NC0, J03NC0, B0L241, J03NC3, J030L6, J03CR2, B0R568, B0P6Y4, B0L217, J108B4, J108B7, J108B9, J118M6, J118M7 J11WR3 through J11WR5, J120Y7, J120Y9, J124X4 through J124X6

Table 4. Summary of Asbestos Samples

Type	Quantity	Method Detection Limits	Results
Asbestos – Thermal System Insulation and Miscellaneous Material	110	<1% weight	Of the 110 samples taken, 34 contained asbestos levels greater than 1%.

Demolition

Demolition of the above-grade structure for the 163-N was complete in October 2006. Below-grade demolition was complete in February 2008, loadout and backfill was complete in April 2008. Demolition of the above-grade structure for the 183-N, NA, NB and NC was complete in September 2006, below-grade demolition of these structures was complete in November 2007. The 183-NC Filter Backwash sump was backfilled with the clean concrete rubble from the above grade section, loadout and backfill was complete in March 2008.

Table 5. Contaminants of Concern for Facility Demolition

Contaminant of Concern	Determination of no impact to the soil
Radionuclides	Contamination was found on the mixer blades of the elementary neutralization unit in the 163-N and also inside and around the alum tanks in the 183-N. All removable contamination was fixed prior to demolition. The contamination was removed with the building demolition debris. GPERS analysis for beta and/or gamma contamination found that all sampling points were less than 2 times background.
Chemicals	All hazardous chemicals were removed prior to demolition. In addition, visual examination for stained soil prior to backfill was conducted to ensure no legacy or new found staining was identified (Refer to Attachment 3, photographs 3 through 5).
Metals	All hazardous materials were removed as part of the above-grade demolition. Prior to below-grade demolition, load out and disposal of waste was performed.
Asbestos	All asbestos was removed before demolition with the exception of the cork mastic on the tanks in the 163-N High Bay. Asbestos controls were in place during demolition and loadout, with air sampling for asbestos performed during the entire evolution.

Civil Survey Information

The Pre-Demolition survey for the 163-N and 183-N Buildings, a Post Demolition Survey for the 163-N Building, and a Post Demolition survey for the 183-N and 183-NA Buildings are included in Attachment 4. A GPS survey of Sump #1 is included in Attachment 4 and a GPS survey of 124-N-1 is included in Attachment 4.

Anomalies

During Demolition of 163-N, small amounts of green liquid were observed dripping off the insulated piping (non-asbestos). Workers had question to whether or not it was glycol. A characterization sample was taken and the result was negative for glycol. Further investigation determined that the liquid was dust suppression water that had come in contact with the soluble green paint that was used to identify the piping as having asbestos free insulation.

Residual amounts of Radiological Contamination were found during demolition of the 183-N, and also in the sump north of 183-N. The alum used at 183-N contained trace amounts of what was believed to be Technologically Enhanced Naturally Occurring Radiological Materials (TENORM). The alum tank area in the 183-N chemical mixing bay was controlled as a fixed contamination area. The water sample from the chemical mixing tank located at the exterior southwest corner of the 183-N settling basins was positive for low levels of contamination. To delineate the area of TENORM material, a number of samples downstream of the chemical mixing tank in the water treatment process were taken and no detectable amounts of radioactive contamination were found.

The Elementary Neutralization Unit (ENU), a small mixing vessel inside 163-N, had measurable levels of radiological contamination in the form of scale on the mixing paddles. The cause of this contamination was not certain because the process at 163-N did not involve radiological materials and no other radiological contamination was found in that area.

During the excavation of the 163-N Sump #1, the field supervisor noticed what looked like red staining on the soils near the sump. The red residue was identified as a small amount of Ion Exchange resin bead material that had washed into the Sump #1 excavation. Once identified these resin beads were cleaned up.

Final Building Status

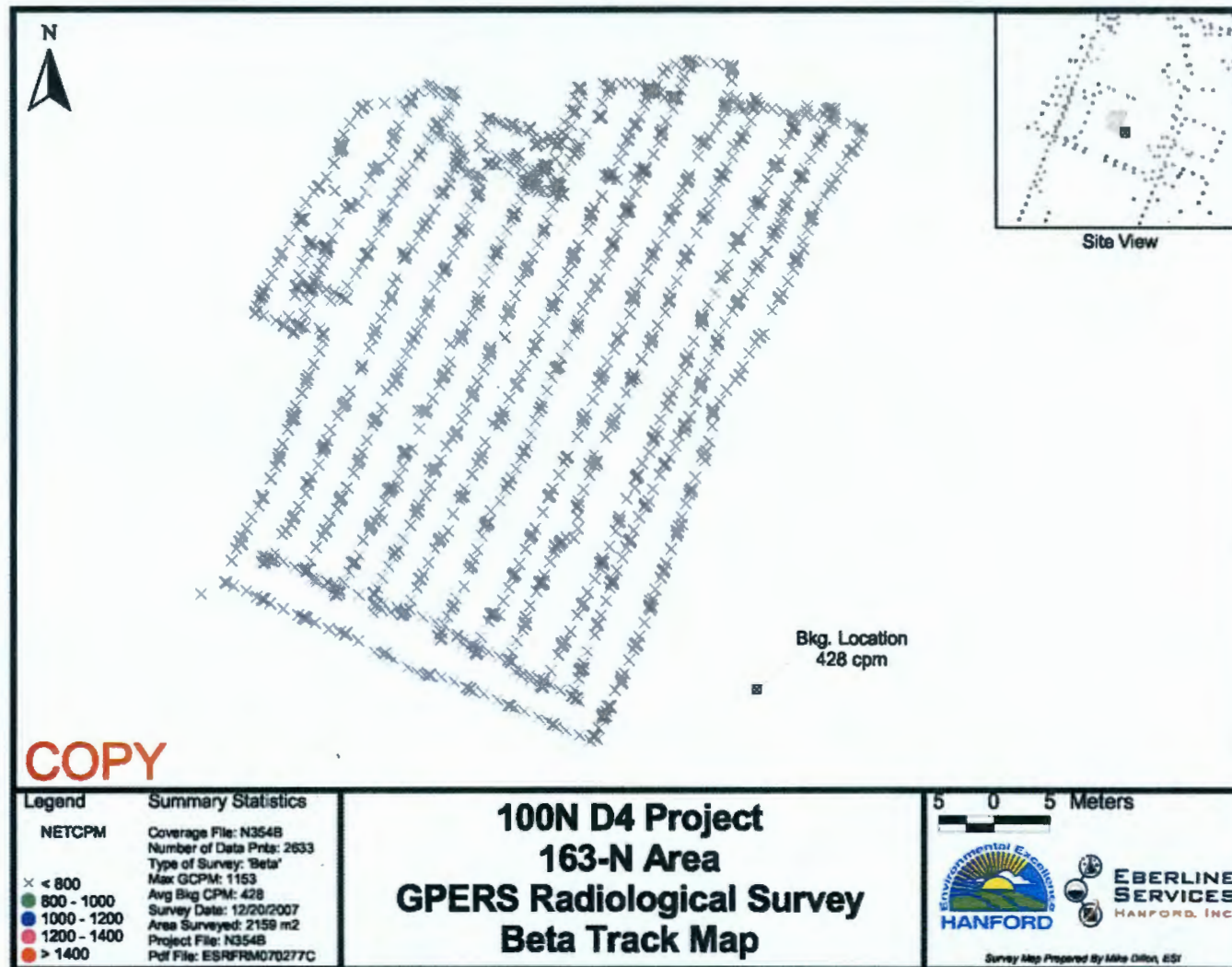
Portions of the below-grade structure of both the 163-N and 183-N were left in place consistent with discussions held with the lead regulatory agency on October 2, 2006 (Refer to Attachment 7, CCN 130293). The concrete stem wall that was part of the foundation of the 163-N and 183-N Service Bay was removed to 3 feet below grade and the remainder left in place. In addition, portions of the 183-N Filter Flume, 183-NB Clearwell, 183-NC Filter Backwash Sump were removed to 3 feet below grade and the remainder of the structures were left in place. No confirmatory sampling was performed at the 163-N, 183-N, -NA, -NB, or -NC Building Sites.

D4 Project Facility Completion Form

**Attachment 2. Global Positioning Environmental Radiological Surveys
(6 pages)**

D4 Project Facility Completion Form

Figure 1.



D4 Project Facility Completion Form

Figure 2.

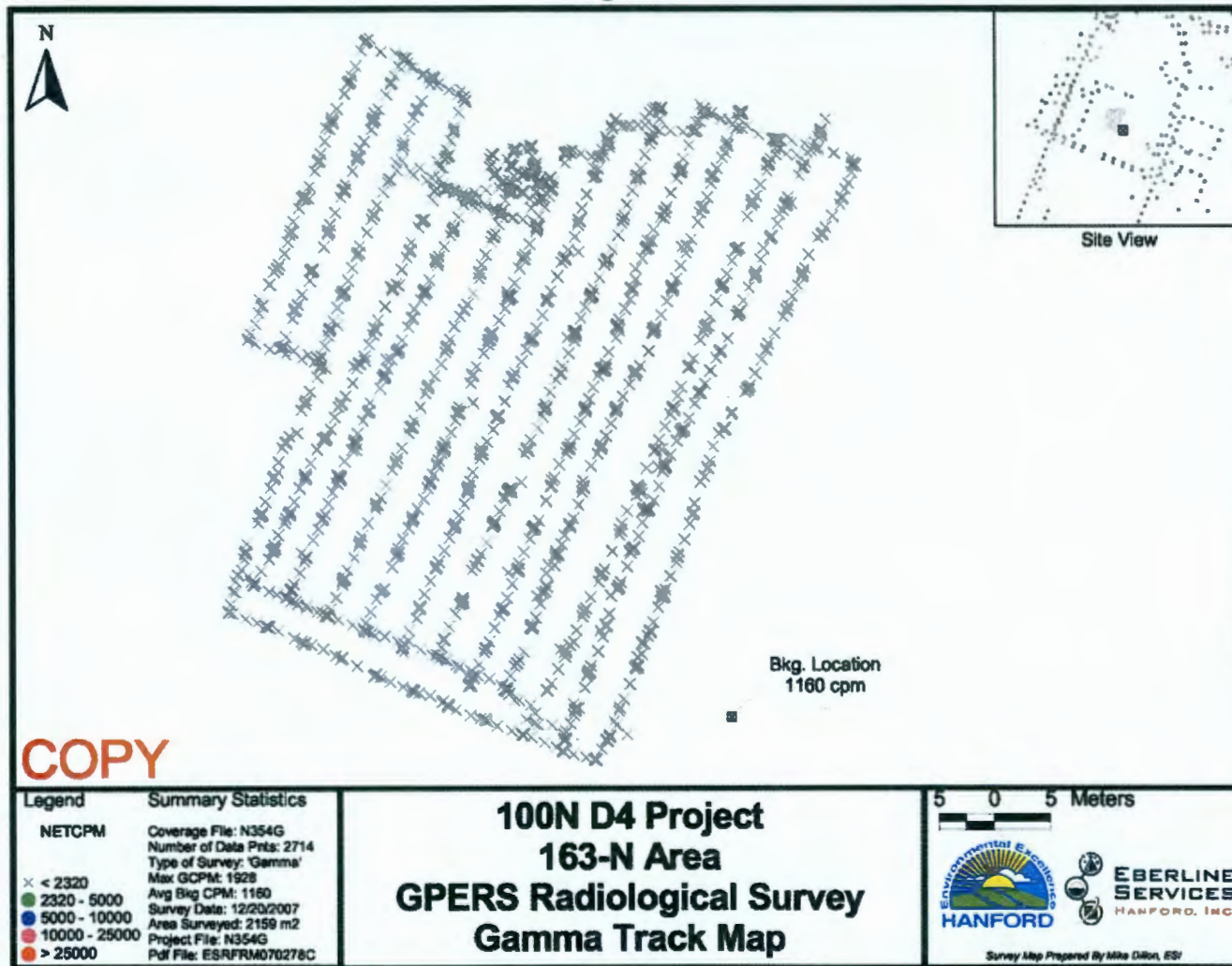
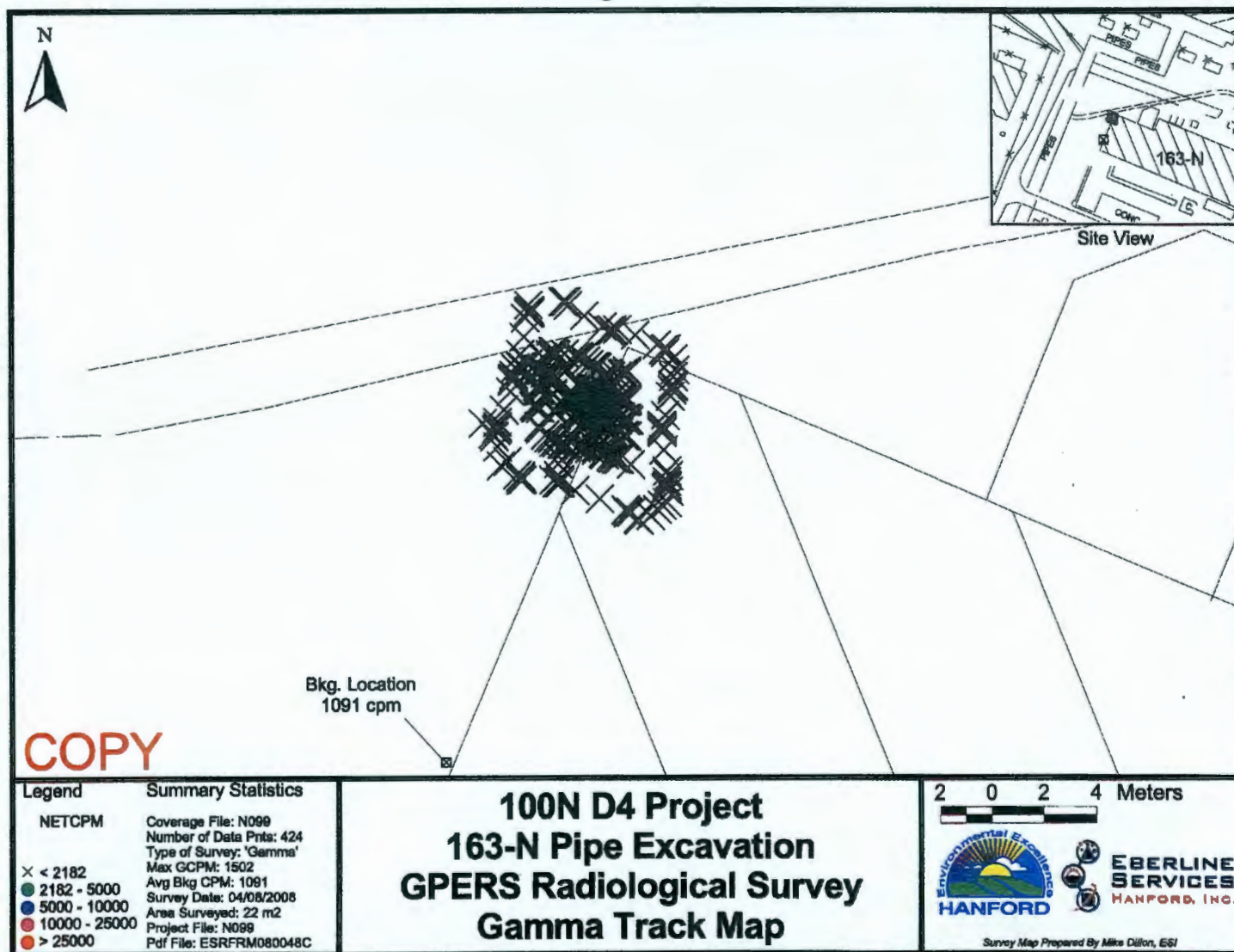
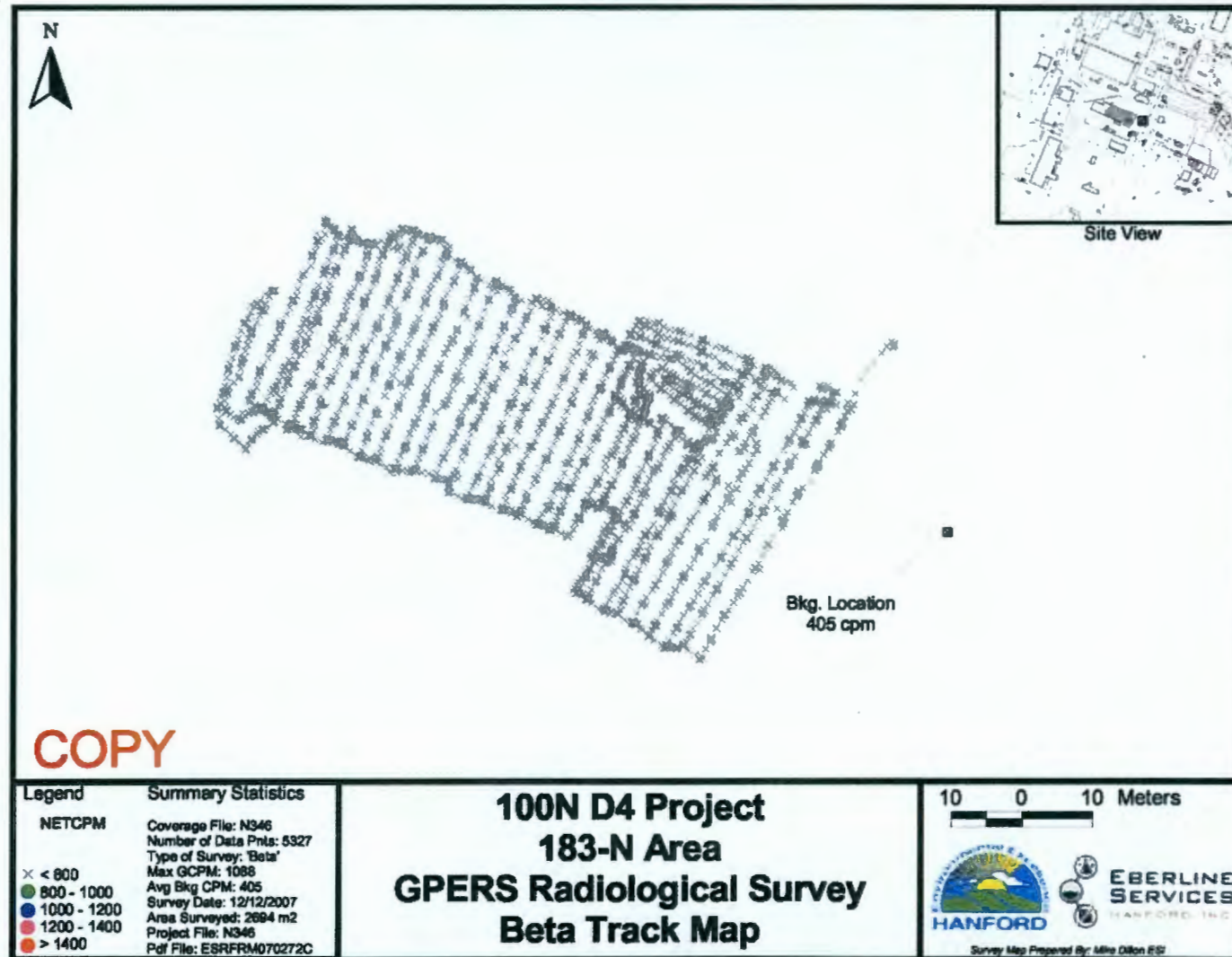


Figure 3.



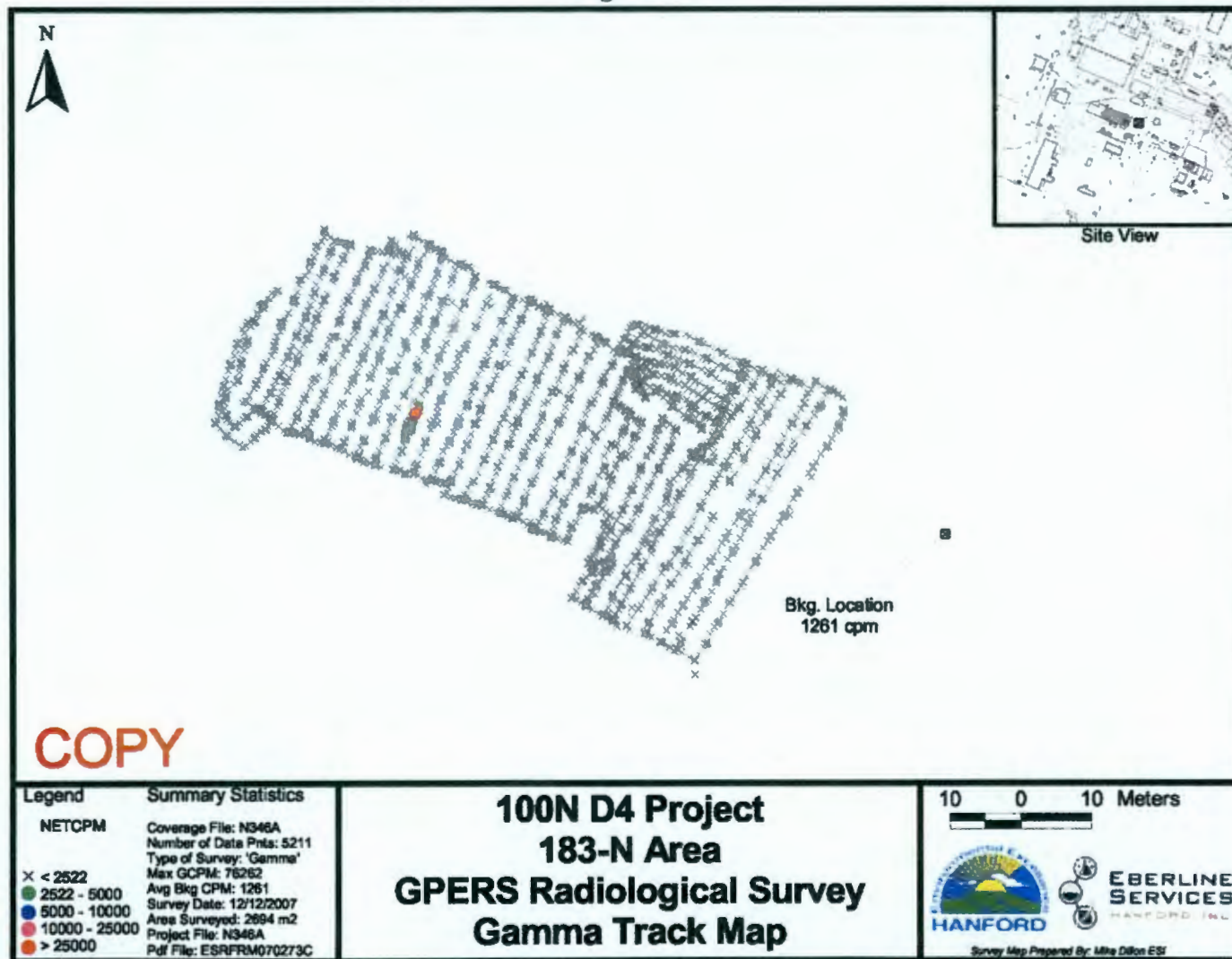
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Figure 4.



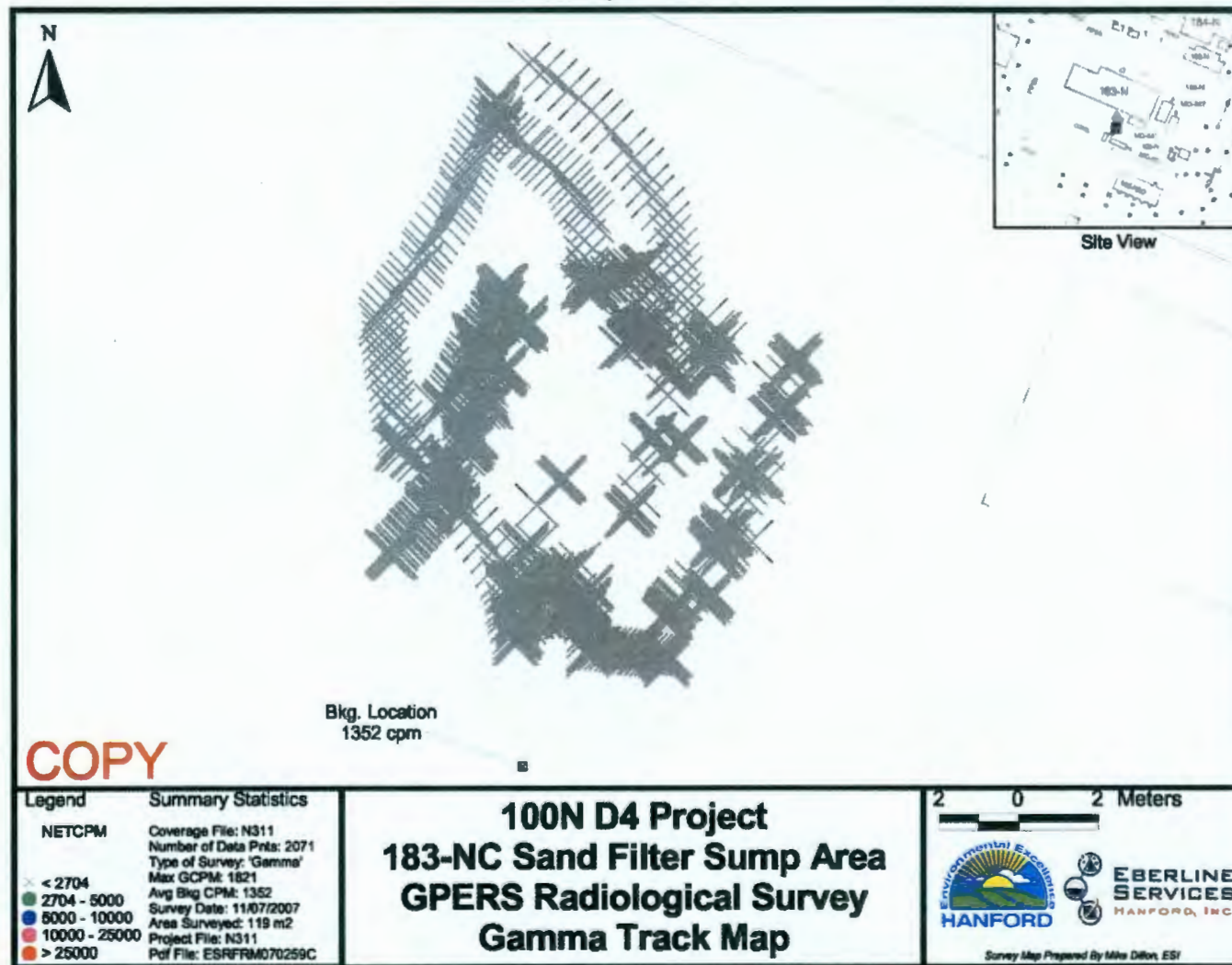
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Figure 5.



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Figure 6.



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**Attachment 3. Project Photographs
(3 Pages)**

D4 Project Facility Completion Form

Photo 1. 163/183 and associated facilities prior to demolition



Photo 2. 163/183 and associated facilities following demolition



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Photo 3. 163/183 and associated facilities following demolition and backfill



Photo 4. 163/183 and associated facilities following demolition



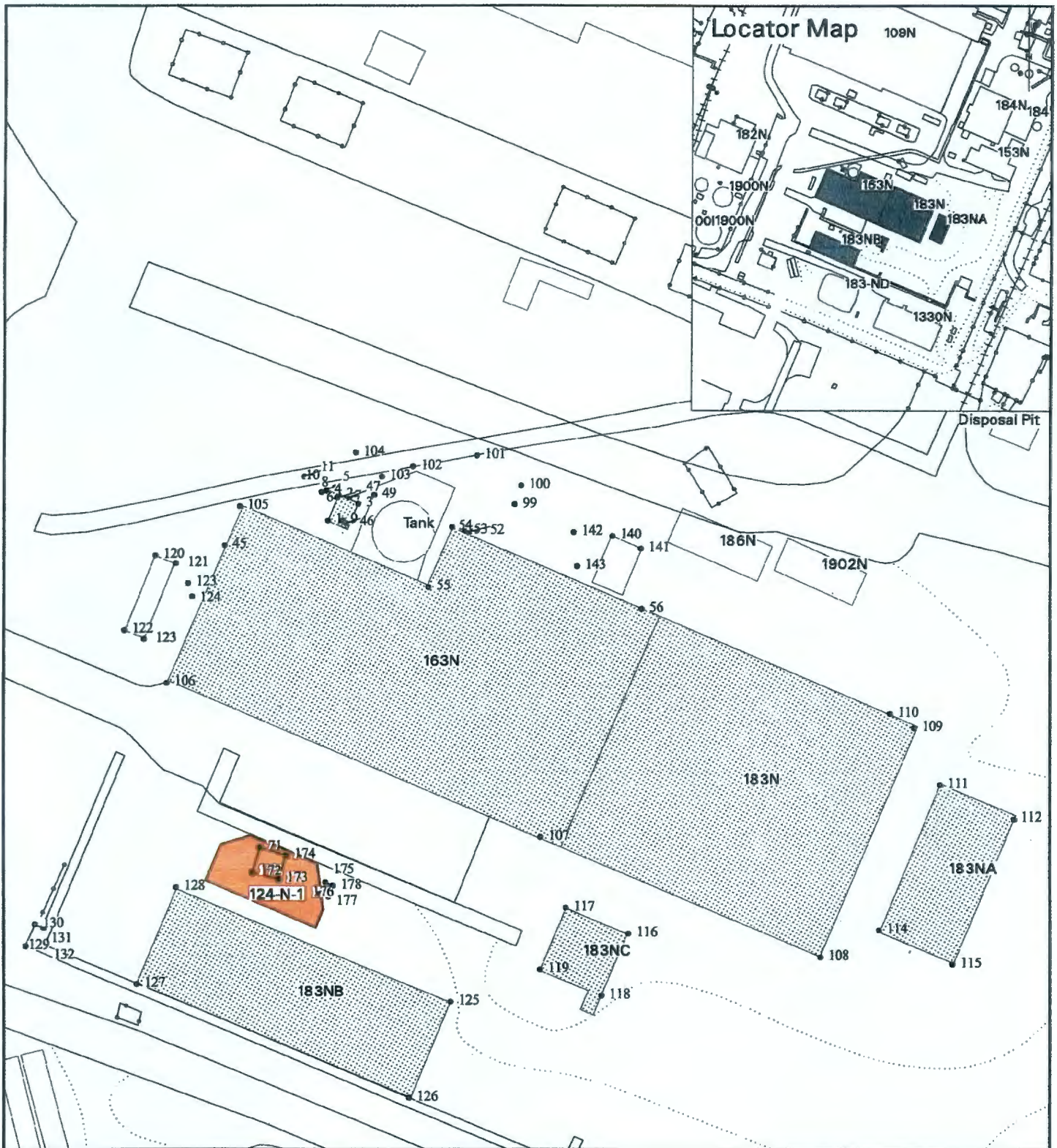
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Photo 5. Close up of Vertical Water Pipe



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**Attachment 4. Civil Survey Information
(15 Pages)**



~ Paved Roads and Sidewalks

~ Unpaved Roads and Trails

~ Railroad

~ Fences

Miscellaneous Polygons

Location of the 163N and 183N Buildings Prior to Demolition

WIDS Site

• GPS Locations for Building Corners, and Surrounding Features

Pre- Demolition Survey for 163N and 183N Buildings



Meters
0 10 20 30

GPS Survey Report for 163N and 183N Buildings Pre Demolition

Project : 100N-10-24

User name	maaye	Date & Time	3:31:44 PM 1/15/2008
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

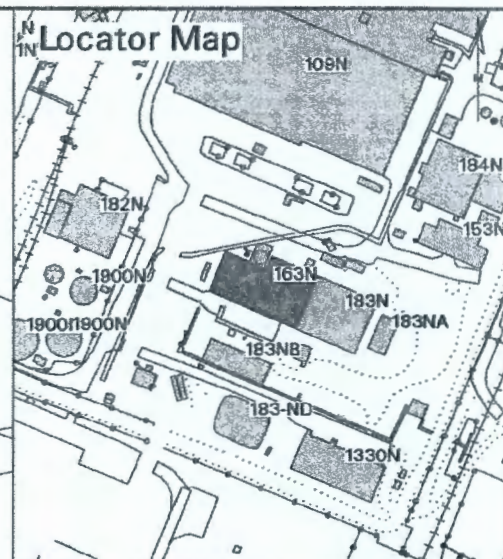
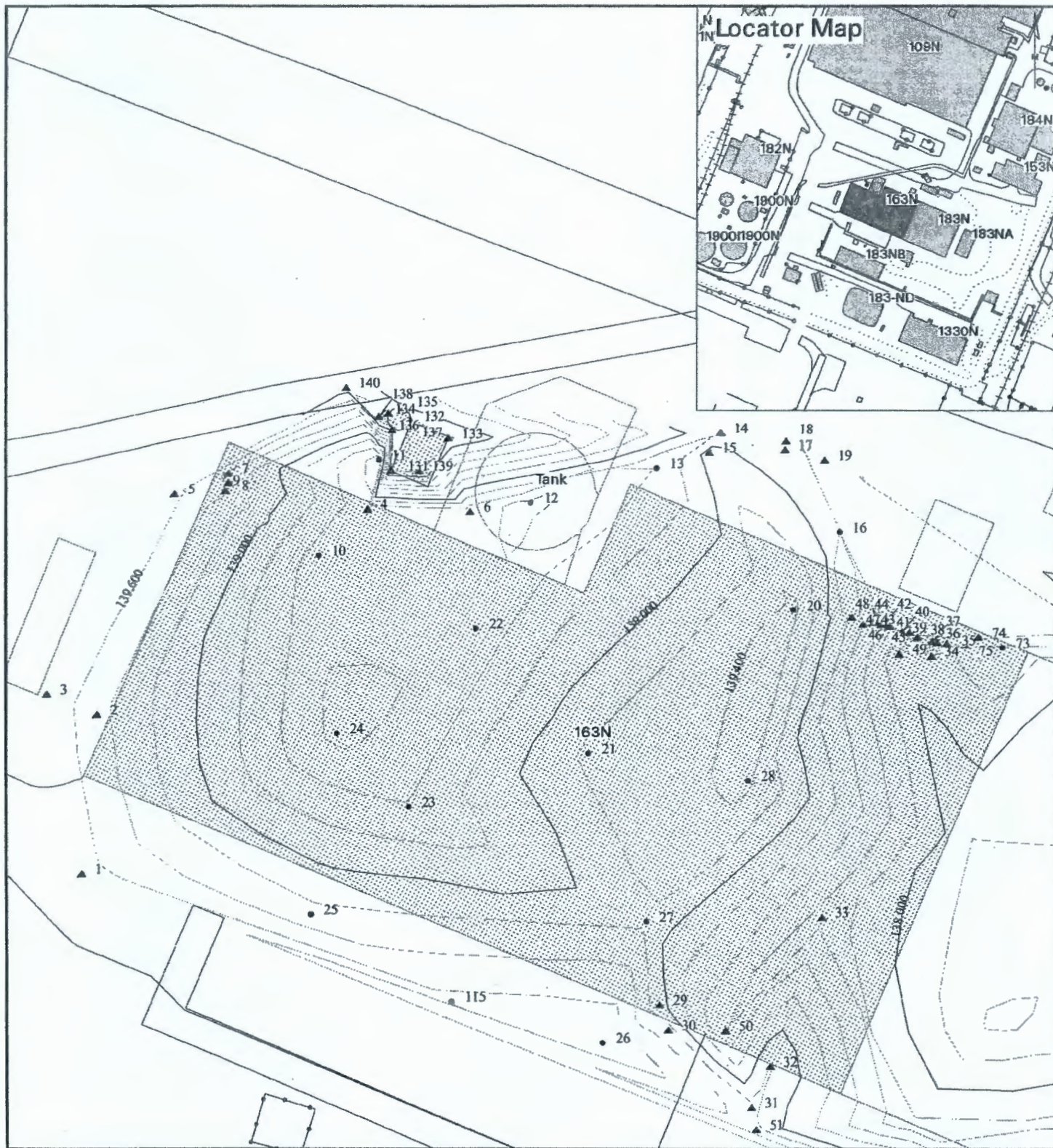
Survey Project Name/Title:	MO900 Post Demolition Survey
Survey Purpose:	Map the location of MO-900 Post Demolition Site
Requested By:	Amy Hood
General Site Location:	100N
Charge Code:	
Field Surveyor:	Margo Aye
Computer Software Used:	Trimble Survey Controller, and Geomatics Office V.1
Survey Equipment Used:	5800
Control Monuments Used:	F-Line
Survey Method:	RTK
Estimated Horizontal Precision:	.0020m
Estimated Vertical Precision:	.0050m
Fieldwork Start Date	10/31/06
Completion Date:	10/31/06
Notes:	

Name	Northing	Easting	Elevation	Feature Code	Description	Time/Date
1	149360.058m	571156.177m	140.222m	sump1-corner		08:22:00 24 Oct 2006
2	149363.369m	571157.495m	140.272m	sump1-corner		08:23:01 24 Oct 2006
3	149362.209m	571159.979m	140.231m	sump1-corner		08:23:31 24 Oct 2006
4	149363.898m	571155.974m	140.020m	valve-pit-edge	circular	08:24:08 24 Oct 2006
5	149364.276m	571157.051m	140.018m	valve-pit-edge	circular	08:24:34 24 Oct 2006
6	149362.797m	571156.278m	140.070m	valve-pit-edge	circular	08:24:49 24 Oct 2006
7	149363.016m	571157.364m	140.221m	valve-pit-edge	circular	08:25:05 24 Oct 2006

8	149363.683m 571155.392m 140.410m	pipe-edge	08:25:36 24 Oct 2006
9	149360.061m 571158.051m 140.269m	center of access area	08:26:18 24 Oct 2006
10	149365.620m 571153.189m 140.121m	mh-air-intake	08:27:49 24 Oct 2006
11	149365.691m 571153.173m 141.942m	access-port	
45	149356.941m 571143.184m 139.572m	frech-drain	
46	149359.760m 571158.407m 139.700m	conc-pad-w-pipes	
47	149363.026m 571158.885m 139.700m	conc-pad-w-pipes	
49	149363.367m 571162.069m 139.700m	conc-pad-w-pipes	
52	149357.907m 571173.738m 139.772m	ug-pipe	
53	149357.989m 571173.194m 139.772m	ug-pipe	
54	149358.462m 571171.426m 139.772m	corn	
55	149351.697m 571168.964m 139.772m	corn	
56	149349.008m 571195.736m 139.942m	corn	
70	149386.094m 571192.689m 139.720m	mh	10:00:13 24 Oct 2006
71	149318.864m 571147.754m 139.576m	mh-sewer	13:28:34 25 Oct 2006
99	149362.127m 571179.725m 140.047m	transformers	
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101	149368.329m 571175.018m 141.837m	ug-pipe-edge	
102	149366.966m 571166.958m 141.836m	tank-wall	
103	149365.654m 571162.969m 141.883m	tank-wall	
104	149368.665m 571159.710m 141.765m	conc-pad-w-pipes	
105	149361.864m 571145.080m 139.622m	corn	
106	149339.579m 571135.879m 139.573m	corn	
107	149320.154m 571183.044m ?	corner-offset	
108	149305.085m 571218.319m ?	corner	offset 183-NA-4
109	149334.011m 571230.207m 139.698m	corn	
110	149335.790m 571227.143m 139.678m	corn	
111	149326.832m 571233.484m 139.590m	corn-183-NA	
112	149322.536m 571242.791m 139.045m	corn-183-NA	
114	149308.502m 571225.759m ?	corn-183-NA	office entered
115	149304.207m 571235.065m 139.623m	corn-183-NA	
117	149311.265m 571186.236m 139.481m	corn-conc-bin	
118	149300.097m 571190.769m 139.484m	corn-conc-bin	

119	149303.419m	571182.989m	139.404m	corn-conc-bin
120	149355.666m	571134.424m	139.574m	vault-septic
121	149354.645m	571137.007m	139.568m	vault-septic
122	149346.237m	571130.472m	139.486m	vauleseptic
123	149352.182m	571138.572m	139.562m	pipeline-corner
123	149345.115m	571133.028m	139.593m	vault-septic
124	149350.462m	571139.065m	140.043m	pipeline-corner
125	149299.326m	571171.754m	139.531m	corn-conc-pad
126	149287.221m	571166.479m	139.510m	conc-pad
127	149301.584m	571132.135m	139.416m	conc-pad
128	149313.823m	571137.128m	139.669m	conc-pad
129	149306.417m	571117.976m	139.458m	108N-pipeline
130	149309.198m	571119.188m	139.419m	108N-pipeline-fence
131	149308.776m	571120.226m	139.489m	108N-pipeline-fence
132	149306.551m	571120.548m	139.506m	108N-pipeline-fence
140	149358.174m	571192.051m	139.772m	corner
141	149356.603m	571195.655m	139.744m	corner
142	149358.623m	571187.181m	139.672m	transformers
143	149354.349m	571187.608m	145.731m	corn
172	149315.725m	571146.836m	139.747m	mh-sewer
173	149314.864m	571150.139m	139.700m	mh-sewer
174	149317.876m	571151.066m	139.688m	mh-sewer
175	149314.467m	571155.928m	139.778m	mh-sewer
176	149313.066m	571155.327m	139.747m	mh-sewer
177	149312.662m	571156.299m	139.776m	mh-sewer
178	149314.027m	571156.867m	139.833m	mh-sewer

13:31:23 25 Oct 2006 [Back to top](#)




 Paved Roads and Sidewalks

 Unpaved Roads and Trails

 Railroad

 Fences

 Location of the 163N Building Prior to Demolition

• GPS Locations for Post Demolition Elevations

▲ GPS Locations for Exposed Piping/Valves
Contour Increments = 2 Meters

See Survey Report for Point Details

Post Demolition Survey for the 163N Building



Meters
0 10 20

GPS Survey Report for 163N Building Post Demolition

Project : 163N

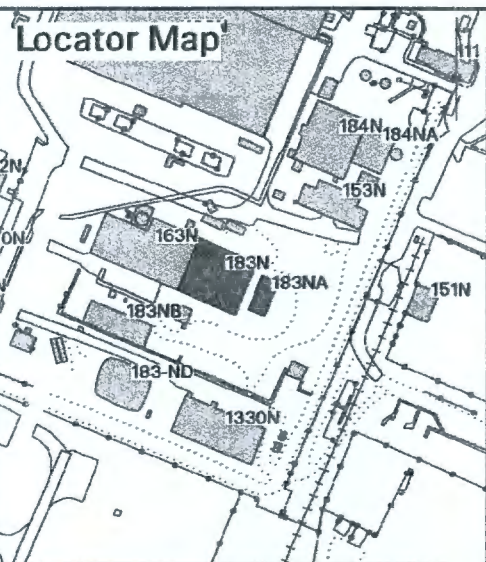
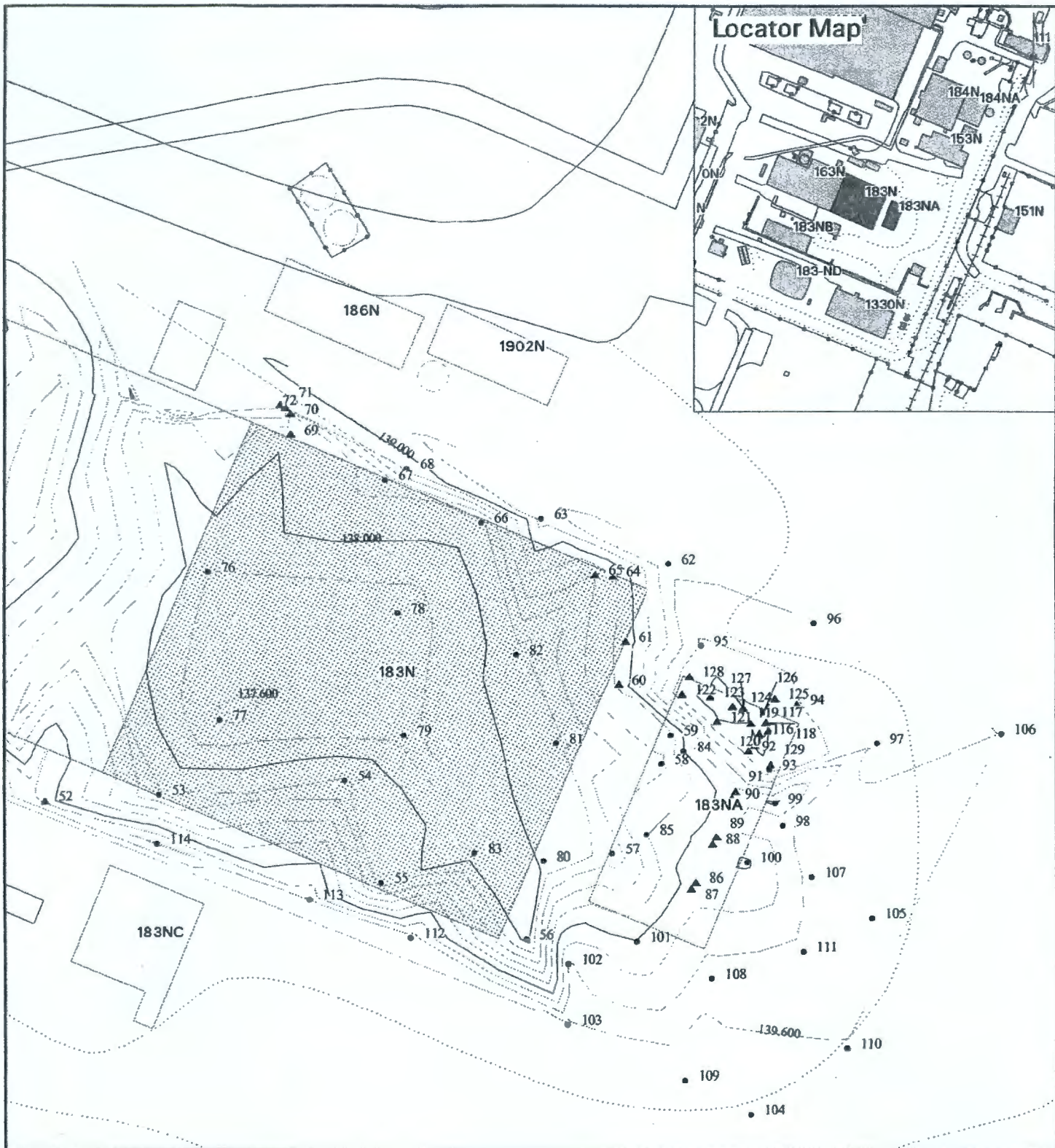
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Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name/Title:	163N Post Demo Survey
Survey Purpose:	Map existing features and excavation boundary
Requested By:	James Crocker
General Site Location:	100N
Charge Code:	R163N0N400
Field Surveyor:	Margo Aye
Computer Software Used:	Trimble Survey Controller, and Geomatics Office V.11
Survey Equipment Used:	5800
Control Monuments Used:	N-2
Survey Method:	RTK
Estimated Horizontal Precision:	.020m
Estimated Vertical Precision:	.050m
Fieldwork Start Date	12/20/07
Completion Date:	12/20/07
Notes:	The 163N and 183N-NA was mapped together, but separat

Name	Northing	Easting	Elevation	Feature Code	Description	Time/Date
1	149333.367m	571135.869m	139.693m	offset		10:33:33 20 Dec 2007
1	149333.367m	571135.869m	139.693m	offset		13:44:38 18 Dec 2007
2	149343.910m	571136.889m	139.462m	offset		10:34:10 20 Dec 2007
2	149343.910m	571136.889m	139.462m	offset		13:45:10 18 Dec 2007
3	149345.261m	571133.644m	139.761m	offset		10:34:25 20 Dec 2007
3	149345.261m	571133.644m	139.761m	offset		13:45:59 18 Dec 2007
4	149357.514m	571154.605m	138.443m	resin-spot		10:34:47 20 Dec 2007
4	149357.514m	571154.605m	138.443m	resin-spot		13:46:34 18 Dec 2007
5	149358.525m	571141.915m	139.650m	offset		10:35:07 20 Dec 2007
5	149358.525m	571141.915m	139.650m	offset		13:48:00 18 Dec 2007
6	149357.348m	571161.444m	138.457m	offset		10:35:26 20 Dec 2007
6	149357.348m	571161.444m	138.457m	offset		13:51:11 18 Dec 2007
7	149359.865m	571145.427m	139.360m	offset		10:35:50 20 Dec 2007
7	149359.865m	571145.427m	139.360m	offset		13:51:43 18 Dec 2007
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9	149358.710m	571145.223m	139.436m	vert-pipe		10:36:37 20 Dec 2007
10	149354.458m	571151.370m	138.508m	topo-pt		10:37:05 20 Dec 2007
11	149360.779m	571155.381m	138.305m	topo-pt		10:38:00 20 Dec 2007
12	149357.920m	571165.377m	138.350m	topo-pt		10:39:20 20 Dec 2007
13	149360.222m	571173.553m	138.608m	topo-pt		10:40:00 20 Dec 2007

14	149362.608m 571177.754m 138.820m	cut-pipe-2in	10:40:46 20 Dec 2007
15	149361.269m 571176.977m 139.077m	cut-pipe-6in	10:41:19 20 Dec 2007
16	149356.022m 571185.642m 138.801m	topo-pt	10:41:46 20 Dec 2007
17	149361.440m 571181.971m 138.839m	pipe-elec-wires	10:42:17 20 Dec 2007
18	149362.031m 571182.092m 138.823m	asphalt-block	10:42:47 20 Dec 2007
19	149360.785m 571184.626m 138.764m	cut-wires-3	10:43:16 20 Dec 2007
20	149350.846m 571182.588m 139.445m	topo-pt	10:44:06 20 Dec 2007
21	149341.331m 571169.101m 139.237m	topo-pt	10:44:44 20 Dec 2007
22	149349.597m 571161.832m 138.464m	topo-pt	10:46:58 20 Dec 2007
23	149337.779m 571157.396m 138.616m	topo-pt	10:48:32 20 Dec 2007
24	149342.674m 571152.552m 138.338m	topo-pt	10:49:09 20 Dec 2007
25	149330.688m 571150.804m 139.260m	topo-pt	10:49:32 20 Dec 2007
26	149322.204m 571170.028m 139.801m	topo-pt	10:50:08 20 Dec 2007
27	149330.186m 571172.859m 139.160m	topo-pt	10:50:32 20 Dec 2007
28	149339.531m 571179.561m 139.450m	topo-pt	10:51:09 20 Dec 2007
29	149324.696m 571173.725m 139.088m	exposed-cable.5in	10:52:09 20 Dec 2007
30	149323.045m 571174.290m 139.290m	rebar-line	10:52:54 20 Dec 2007
31	149318.008m 571179.749m 139.266m	pipe-entering-grnd-2-ft	10:53:37 20 Dec 2007
32	149320.665m 571180.981m 139.215m	pipe-cut-2-ft	10:54:47 20 Dec 2007
33	149330.484m 571184.445m 138.331m	conc-rebar-line	10:55:58 20 Dec 2007
34	149347.782m 571191.681m 138.132m	conc-rebar-line	10:56:51 20 Dec 2007
35	149348.623m 571192.706m 138.818m	2-cut-cond-wires	10:58:16 20 Dec 2007
36	149348.680m 571192.048m 138.713m	cut-pipe-wires	11:00:34 20 Dec 2007
37	149348.748m 571191.731m 138.924m	cut-pipe-wires	11:01:07 20 Dec 2007
38	149349.052m 571190.727m 138.773m	cut-pipe-wires	11:01:25 20 Dec 2007
39	149349.378m 571190.229m 138.735m	cut-pipe-wires	11:01:40 20 Dec 2007
40	149349.387m 571189.730m 138.597m	cut-pipe-wires	11:02:14 20 Dec 2007
41	149349.753m 571188.961m 138.653m	cut-pipe-wires	11:03:30 20 Dec 2007
42	149349.927m 571188.584m 138.806m	cut-pipe-wires	11:03:56 20 Dec 2007
43	149349.873m 571188.387m 138.731m	cut-pipe-wires	11:04:09 20 Dec 2007
44	149349.995m 571188.006m 138.682m	cut-pipe-wires	11:04:27 20 Dec 2007
45	149350.096m 571188.195m 139.033m	cut-pipe-wires	11:04:46 20 Dec 2007
46	149350.012m 571187.836m 138.751m	cut-pipe-wires	11:05:01 20 Dec 2007
47	149349.893m 571187.197m 138.602m	cut-pipe-wires	11:05:19 20 Dec 2007
48	149350.342m 571186.417m 138.686m	conduit-wall	11:05:44 20 Dec 2007
49	149347.923m 571189.550m 138.074m	conduit-wall	11:07:16 20 Dec 2007
50	149323.006m 571178.059m 138.401m	conduit-wall	11:08:03 20 Dec 2007
51	149316.528m 571180.033m 139.307m	3-exposed-1in-blue-cond	11:09:05 20 Dec 2007
73	149348.347m 571196.293m 138.355m	topo-pt	11:24:02 20 Dec 2007
74	149349.024m 571194.762m 138.649m	4inch-pipe	11:25:29 20 Dec 2007
75	149348.537m 571193.872m 138.532m	2-3ft-pipe-cut	11:26:46 20 Dec 2007
115	149324.903m 571160.167m 139.655m	topo-pt-top	11:49:47 20 Dec 2007
131	149360.058m 571156.177m 140.222m	sumpl	
132	149363.369m 571157.495m 140.272m	sumpl	
133	149362.209m 571159.979m 140.231m	sumpl	
134	149363.898m 571155.974m 140.020m	valve-pit	
135	149364.276m 571157.051m 140.018m	valve-pit	
136	149362.797m 571156.278m 140.070m	valve-pit	

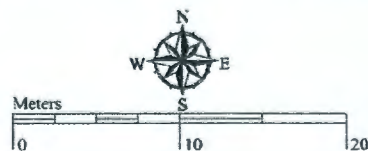
137 149363.016m 571157.364m 140.221m valve-pit
138 149363.683m 571155.392m 140.410m pipe-edge
139 149360.061m 571158.051m 140.269m center
140 149365.620m 571153.189m 140.121m mh-air-intake



- Paved Roads and Sidewalks
- Unpaved Roads and Trails
- Railroad
- Fences

- Location of the 183N & 183NA Buildings Prior to Demolition
- GPS Locations for Post Demolition Elevations
- ▲ GPS Locations for Exposed Piping/Valves
Contour Increments = 2 Meters
- See Survey Report for Point Details

Post Demolition Survey for the 183N & 183NA Buildings



GPS Survey Report for 183N and 183NA Buildings Post Demolition

Project : 163N

User name	maaye	Date & Time	1:37:06 PM 1/22/2008
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name/Title:	183N and 183NA Post Demo Survey
Survey Purpose:	Map existing features and excavation boundary
Requested By:	James Crocker
General Site Location:	100N
Charge Code:	R163NON400
Field Surveyor:	Margo Aye
Computer Software Used:	Trimble Survey Controller, and Geomatics Office V.11
Survey Equipment Used:	5800
Control Monuments Used:	
Survey Method:	RTK
Estimated Horizontal Precision:	.020m
Estimated Vertical Precision:	.050m
Fieldwork Start Date	12/20/07
Completion Date:	12/20/07
Notes:	The 163N and 183N-NA was mapped together but separate

Name	Northing	Easting	Elevation	Feature Code	Description	Time/Date
53	149317.052m	571190.333m	138.228m	topo-pt		11:10:35 20 Dec 2007
54	149318.236m	571205.655m	138.220m	topo-pt		11:11:07 20 Dec 2007
55	149309.793m	571208.654m	138.099m	topo-pt-toe		11:11:25 20 Dec 2007
56	149305.095m	571220.559m	137.919m	topo-pt-toe		11:11:53 20 Dec 2007
57	149312.202m	571227.681m	138.274m	topo-pt-toe		11:12:17 20 Dec 2007
58	149319.630m	571231.738m	138.562m	topo-pt-toe		11:12:44 20 Dec 2007
59	149322.009m	571232.506m	138.691m	topo-pt-toe		11:13:32 20 Dec 2007
60	149326.272m	571228.276m	138.836m	cut-4in-pipe		11:14:13 20 Dec 2007
61	149329.822m	571228.799m	138.884m	cut-4in-pipe		11:14:45 20 Dec 2007
62	149336.295m	571232.328m	139.549m	topo-pt		11:15:23 20 Dec 2007
63	149340.030m	571221.788m	139.277m	topo-pt		11:16:11 20 Dec 2007
64	149335.262m	571227.730m	138.762m	elec-pipeing-lin		11:16:42 20 Dec 2007
65	149335.373m	571226.344m	138.596m	odd-rounded-end-pipe		11:17:52 20 Dec 2007
66	149339.724m	571216.875m	138.129m	topo-pt-toe		11:18:22 20 Dec 2007
67	149343.206m	571208.998m	138.273m	topo-pt-toe		11:18:49 20 Dec 2007
68	149344.144m	571210.759m	138.883m	topo-pt		11:19:20 20 Dec 2007
69	149347.057m	571201.203m	138.035m	.5in-pipe		11:21:54 20 Dec 2007
70	149348.805m	571201.177m	138.205m	topo-toe		11:22:40 20 Dec 2007
71	149349.338m	571200.732m	138.648m	lin-pipe		11:23:01 20 Dec 2007

72	149349.549m	571200.310m	138.690m	lin-pipe	11:23:31 20 Dec 2007
76	149335.585m	571194.395m	137.797m	topo-pt	11:28:16 20 Dec 2007
77	149323.258m	571195.332m	137.580m	topo-pt	11:28:52 20 Dec 2007
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79	149321.993m	571210.493m	137.746m	topo-pt	11:29:47 20 Dec 2007
80	149311.580m	571221.969m	138.014m	topo-pt	11:30:46 20 Dec 2007
81	149321.352m	571223.077m	138.148m	topo-pt	11:31:18 20 Dec 2007
82	149328.721m	571219.744m	138.108m	topo-pt	11:31:45 20 Dec 2007
83	149312.205m	571216.322m	137.866m	topo-pt	11:32:28 20 Dec 2007
84	149320.670m	571233.591m	139.004m	topo-pt	11:33:05 20 Dec 2007
85	149313.745m	571230.521m	138.793m	topo-pt	11:33:35 20 Dec 2007
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87	149309.315m	571234.208m	139.118m	verticle-pipe-edge	11:34:26 20 Dec 2007
88	149313.024m	571235.966m	139.106m	verticle-pipe-edge	11:34:41 20 Dec 2007
89	149313.598m	571236.224m	139.115m	verticle-pipe-edge	11:34:55 20 Dec 2007
90	149316.790m	571237.502m	139.124m	verticle-pipe-edge	11:35:11 20 Dec 2007
91	149317.367m	571237.813m	139.114m	verticle-pipe-edge	11:35:32 20 Dec 2007
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94	149324.573m	571242.886m	139.813m	corn-concrete	11:37:34 20 Dec 2007
95	149329.511m	571234.991m	139.824m	topo-pt	11:38:25 20 Dec 2007
96	149331.375m	571244.269m	139.627m	topo-pt	11:39:11 20 Dec 2007
97	149321.338m	571249.500m	139.646m	topo-pt	11:39:33 20 Dec 2007
98	149314.504m	571241.716m	139.356m	topo-pt	11:40:05 20 Dec 2007
99	149316.364m	571241.037m	138.970m	topo-pt-toe	11:40:30 20 Dec 2007
100	149311.488m	571238.740m	138.970m	topo-pt-toe	11:40:55 20 Dec 2007
101	149304.924m	571229.665m	139.006m	topo-pt	11:41:30 20 Dec 2007
102	149303.051m	571224.032m	139.427m	topo-pt-top	11:41:51 20 Dec 2007
103	149298.037m	571224.028m	139.619m	topo-pt-top	11:42:21 20 Dec 2007
104	149290.653m	571239.004m	139.777m	topo-pt-top	11:43:00 20 Dec 2007
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106	149322.168m	571259.699m	139.599m	topo-pt-top	11:44:02 20 Dec 2007
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111	149304.081m	571243.389m	139.468m	topo-pt-top	11:46:49 20 Dec 2007
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113	149308.389m	571202.668m	139.338m	topo-pt-top	11:48:20 20 Dec 2007
114	149312.970m	571190.109m	139.427m	topo-pt-top	11:48:45 20 Dec 2007
116	149322.184m	571239.744m	139.970m	vert-pipe-edge	11:56:32 20 Dec 2007
117	149322.392m	571240.507m	140.001m	vert-pipe-edge	11:56:57 20 Dec 2007
118	149323.100m	571240.283m	139.999m	vert-pipe-edge	11:57:17 20 Dec 2007
119	149323.019m	571239.066m	139.993m	vert-pipe-edge	11:57:43 20 Dec 2007
120	149321.150m	571239.391m	140.018m	vert-pipe-edge	11:58:22 20 Dec 2007
121	149323.170m	571236.310m	139.977m	concrete-edge	11:58:51 20 Dec 2007
122	149325.446m	571233.422m	139.964m	concrete-edge	11:59:19 20 Dec 2007
123	149325.231m	571235.762m	140.034m	verticle-cond-4in-in-line	11:59:53 20 Dec 2007

124	149324.435m 571237.577m 140.170m	verticle-cond-4in-in-line	12:00:39 20 Dec 2007
125	149325.101m 571241.052m 139.888m	concrete-edge	12:01:34 20 Dec 2007
126	149323.992m 571240.128m 139.868m	concrete-edge	12:01:51 20 Dec 2007
127	149324.302m 571238.446m 139.998m	concrete-edge	12:02:18 20 Dec 2007
128	149326.938m 571234.041m 139.947m	concrete-edge	12:02:49 20 Dec 2007
129	149319.563m 571240.683m 139.984m	concrete-edge	12:03:25 20 Dec 2007 Back to top

Survey Data Report for Sump 1 (NW Corner of 163N)

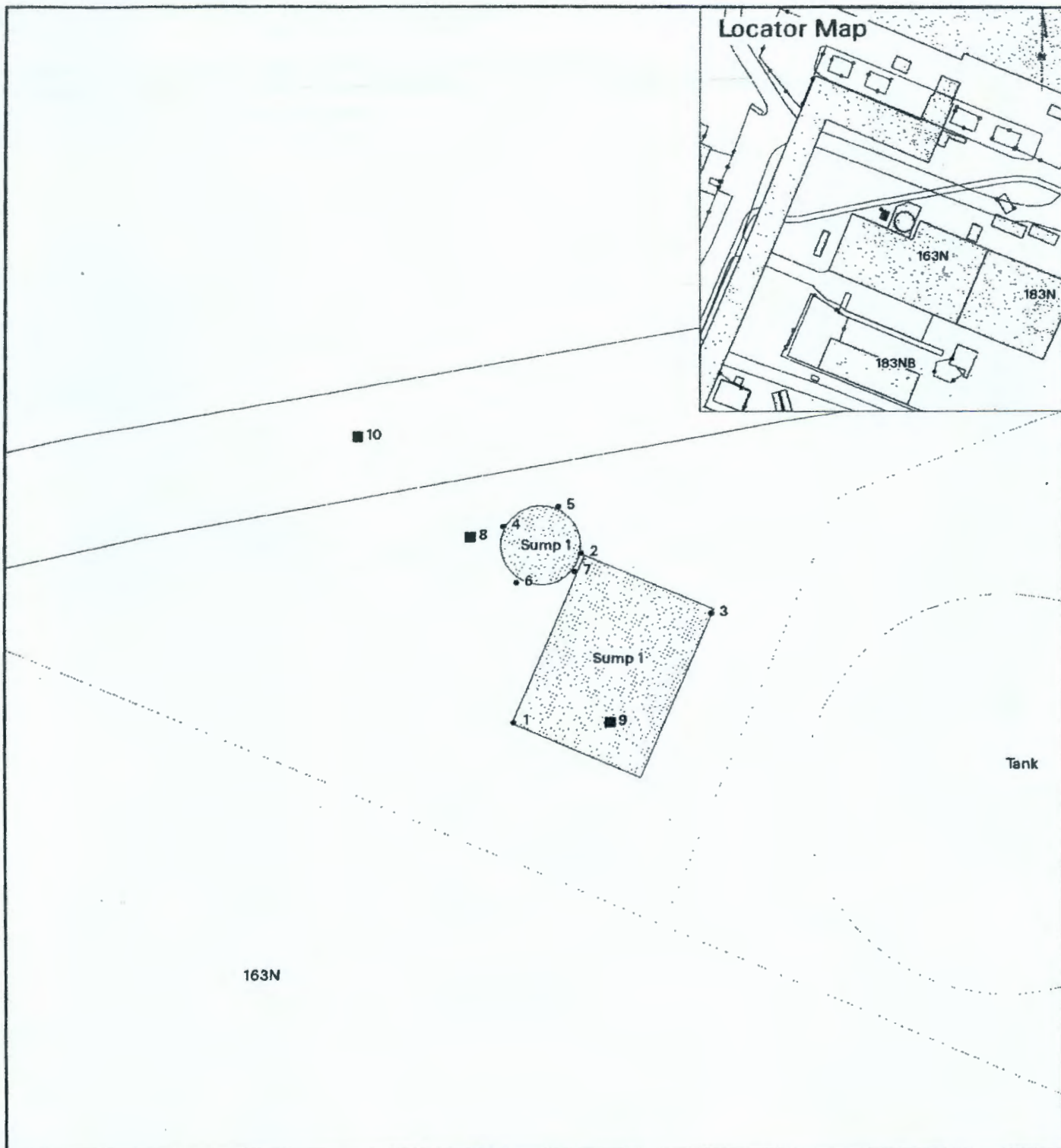
Project : 100N-10-24

User name	maaye	Date & Time	3:19:05 PM 11/8/2006
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name/Title:	163N Sump 1
Survey Purpose:	Map location for Sump 1 next to NW corner of 163N
Requested By:	James Crocker
General Site Location:	100N
Charge Code:	
Field Surveyor:	Margo Aye
Computer Software Used:	Trimble Survey Controller, and Geomatics Office V.1
Survey Equipment Used:	5800
Control Monuments Used:	F-Line
Survey Method:	RTK
Estimated Horizontal Precision:	.0020m
Estimated Vertical Precision:	.0050m
Fieldwork Start Date	10/31/06
Completion Date:	10/31/06
Notes:	

Name	Northing	Easting	Elevation	Feature Code	Description
1	149360.058m	571156.177m	140.222m	sump1-corner	
2	149363.369m	571157.495m	140.272m	sump1-corner	
3	149362.209m	571159.979m	140.231m	sump1-corner	
4	149363.898m	571155.974m	140.020m	valve-pit-edge	circular
5	149364.276m	571157.051m	140.018m	valve-pit-edge	circular
6	149362.797m	571156.278m	140.070m	valve-pit-edge	circular
7	149363.016m	571157.364m	140.221m	valve-pit-edge	circular
8	149363.683m	571155.392m	140.410m	pipe-edge	
9	149360.061m	571158.051m	140.269m	center of access area	
10	149365.620m	571153.189m	140.121m	mh-air-intake	

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Locator Map

163N

Tank



Paved Roads and Sidewalks



Location of Sump 1, Next to the 163N Building
Prior to Demolition

Unpaved Roads and Trails



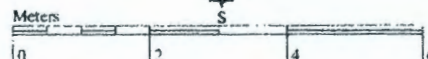
Railroad



Fences

- GPS Locations for Corners
Prior to Demolition
- GPS Locations for Surrounding Features
See Survey Report for Point Details

Pre- Demolition Survey of Sump 1 at 163N



D4 Project Facility Completion Form

**Attachment 5. Email, Steve E. Killoy to ^WCH Document Control, Regulatory
Decision Cron # Request -- 124-N-1 Cess Pool, November 6, 2006.
(2 Pages)**

Hood, Amy M

From: Westover, Kent R [Kent_R_Westover@RL.gov]
Sent: Monday, November 06, 2006 6:41 AM
To: Killoy, Steve E
Cc: Smith, Douglas C (Chris); Lachmann, Sarah L; Nielson, Robert R; Carlson, Richard A; Crocker, James W; Donnelly, Jack W; Bond, Rick
Subject: RE: 124-N-1 Cess Pool

DOE concurs also.

From: Bond, Rick (ECY) [mailto:FBON461@ecy.wa.gov]
Sent: Thursday, November 02, 2006 10:25 AM
To: Killoy, Steve E
Cc: Westover, Kent R; Smith, Douglas C (Chris); Lachmann, Sarah L; Nielson, Robert R; Carlson, Richard A; Crocker, James W; Donnelly, Jack W
Subject: RE: 124-N-1 Cess Pool

Steve,
Ecology concurs with the actions as described below.

Rick Bond

Facility Transition Project Manager
Washington State Department of Ecology
3100 Port of Benton Richland, WA99354
(509) 372-7885
e-mail: FBON461@ECY.WA.GOV

-----Original Message-----

From: Killoy, Steve E [mailto:steve.killoy@wch-rcc.com]
Sent: Thursday, November 02, 2006 9:45 AM
To: Bond, Rick (ECY)
Cc: Westover, Kent R; Smith, Chris; Lachmann, Sarah L; Nielson, Robert R; Carlson, Richard A; Crocker, James W; Donnelly, Jack W
Subject: 124-N-1 Cess Pool

Rick,

As we discussed on the phone, we would like to stabilize the area within the Cesspool (1607-N1) related to the 124-N-1 waste site. As I indicated, several days ago while blading the area adjacent to the Cesspool, the concrete/concrete block structure of the Cesspool was impacted with the blade of the equipment moving some of the structure approximately 2 to 3 feet to the (plant) south leaving an opening approximately 1 ½ ft x 2 ft into the Cesspool. This site is identified as an RTD site and is planned to be remediated by WCH Field Remediation (FR) at a future date. In order to stabilize the area to allow continued demolition activities for 183N/163N in the area, we would like to backfill the Cesspool with sand/soil which is estimated to take approximately 16 cubic yards. The site will be photographed and GPS performed to ensure the location of the site is documented. This information will be included in the 183N/163N Post Demolition Summary Report to document what is done and FR will receive the information to support future remediation of the site.

We request that you document your concurrence with this approach via response to this email. If you have

5/7/2008

any questions, please contact me.

Steve Killoy
100N D4 Environmental Lead

509.373.5473 (Hanford)
509.727.7804 (Cell)
509.946.8279 (Office)

D4 Project Facility Completion Form

**Attachment 6. E-mail, James Crocker, Subject: 163-N and 183-N Soils Inspection-
Ready to Backfill, CCN 138172**

^WCH Document Control

From: Crocker, James W
Sent: Thursday, February 21, 2008 1:59 PM
To: ^WCH Document Control
Subject: FW: 163-N and 183-N Excavation Soils Inspection - Ready to Backfill

Attachments: 163-N, 183-N Feb 14, 2008-a.JPG; 163-N, 183-N Feb 14, 2008-c.JPG; 163-N, 183-N Feb 14, 2008-e.JPG; 163-N, 183-N Feb 14, 2008-l.JPG

The email below needs to be entered into the Document Control System. Please provide a CCN number.

Thanks

James Crocker
 373-9733

From: Crocker, James W
Sent: Tuesday, February 19, 2008 8:51 AM
To: Allen, Mark E
Cc: Saueressig, Daniel G; Wahler, William G; Mewes, Bradley S
Subject: 163-N and 183-N Excavation Soils Inspection - Ready to Backfill

The soils at the 163-N and 183-N open excavations were inspected for signs of staining on February 14, 2008 and found to be free from staining. The required LARADS surveys and GPS civil surveys have been completed. No radiological contamination was found during the LARADS surveys. The 183-N Water Treatment Plant, 183-NB Clearwell, and 163-N Water De-Mineralization Plant excavations are ready to backfill. Note that the 108-N Chemical Unloading Trench is only partially excavated, and this open excavated portion is pending a LARADS survey that is scheduled for tomorrow, Wednesday February 19, 2008. The caustic and acid tanks inside the 108-N trench at the south-west corner and other portions of the 108-N trench still need to be excavated, then LARADS, and inspected for stains prior to backfill.

Also note that these excavations were walked down with James Crocker (Characterization), Dan Saueressig (Environmental), Dan Gamon (FR), and Carl Grando (FR) on January 17, 2008. The 183-N, 163-N and portions of the 108-N trench were inspected, taking note of any signs of staining and anomalous items left. There are three pipes left that are planned to be removed by D4 at the north-west corner, two on the east side were removed, but one line on the east side is still pressurized and ties into the main water feed for 100-N and will be left at this time. No staining was noted during this walkdown either.



163-N, 183-N Feb 14, 2008-a.JPG... 163-N, 183-N Feb 14, 2008-c.JPG... 163-N, 183-N Feb 14, 2008-e.JPG... 163-N, 183-N Feb 14, 2008-l.JPG...

James Crocker, P.E.
 Principal Engineer
 TRUTech LLC
 100-N / MO-415 / A7
 WCH D4 Characterization
 office: 373-9733
 cell: 430-7939









D4 Project Facility Completion Form

**Attachment 7. Sampling Determination Form for the 163-N, 183-N, -NA, -NB, and
-NC Facilities (SDF-100N-002). Includes Washington Closure Hanford Meeting
Minutes, 183N, 163N Demo and Disposition Meeting, October 2, 2006 (CCN 130293)
(25 Pages)**

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-002

A. INSTRUCTIONS

This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.

B. GENERAL INFORMATION

Building Name: Demineralized Water Plant / Water treatment Plant / Pump House / Clearwell / Filter Backwash Sump Building Number: 163N / 183N / 183NA / 183NB / 183NC

WIDS Sites Associated or Adjacent:
100-N-10 (rejected), 100-N-11 (rejected), 100-N-84 (colon sites: 1, 3, 4, 5, 6, 7), 120-N-2, 120-N-8, within 100-N-61 planned excavation boundary edge, within 120-N-3 planned excavation boundary edge

Other:
N/A

C. INFORMATION SOURCES

Available information (list document number for each if applicable):

Historical Site Assessment: N/A

Site Walkdown: N/A

IH Characterization Report: N/A

Radiological Survey: Global Positioning Environmental Radiological Surveys (GPERS) ESR-FRM-07-0259, 272, 273, 277, 278

IHC/FHC Document: 100-N Ancillary Facilities Preliminary Hazard Categorization CCN 095435

WIDS/SIS: WIDS Data sheets for 163N, 183N, 183NA, 183NB, 183NC, 100-N-84:3

Post Demolition Summary Report for the 163-N Water Demineralization Plant, 183-N

PDSR: Water Treatment Plant, 183-NA Pump House, 183-NB Clearwell, and 183-NC Filter Backwash Sump CCN 140560

Facility Inspection: 163-N and 183-N Soils Inspection-Excavation Ready for Backfill CCN 138172

Waste Characterization Checklist: Waste Profile WP 2005 09 20 005 rev 0

Summary Report: Characterization Summary Reports CCN 122913 (183N), CCN 122914 (163N)

Other:

183-N/163-N Demo and Disposition Meeting Minutes CCN 130293 (Included in PDSR)

Ecology backfill approval 183-N Oil Spill CCN 135456

100N deactivation drawings CCN 096469 (cold & dark 163-N, 183-N, sump #1)

Work Instruction for Confirmatory Sampling of the 100-N-84:3, 100-N Area Filter and Potable Water Pipelines 0100N-WI-G0009, Rev. 0

Work Package 100 07 08 16 001b samples of soil and water in 2008 includes data (pH, TCLP metals, Hg, GEA, gross alpha/beta).

Work Package 100 06 11 21 002 for demo of 163N/183N

D. HAZARDOUS SUBSTANCES

Check all that apply:

☐ None ☒ Asbestos containing material ☒ Lead ☒ PCBs/PCB Articles ☒ Oils/Greases
☒ Chemicals List: COPCs for the 100-N-84:3 subsite are total chromium, hexavalent chromium, mercury, PCBs, PAH and sulfate (0100N-WI-G0009 pg. 6).

☒ Radiological Contamination ☒ Mercury/Mercury Devices

☒ During treatment, liquid alum (aluminum sulphate), Separan (polyacrylamide coagulant), and liquid chlorine were added. Chlorine was added for the control of slime and algae and may have been used to assist in coagulation, odor, and iron removal problems (CCN 140560 Appendix 1 pgs. 1-2).

Other: The alum used at 183-N contained trace amounts of naturally occurring radium-226, radium-228, and thorium-228, which are considered to be Naturally Occurring Radioactive Materials (NORM). To determine if

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-002

NORM was present, a number of samples downstream of the 183-N chemical mixing tank were taken and no detectable amounts of radioactive contamination were found (CCN 140560 pgs. 6-7).

References/Comments:

See in-text citations above.

Liquids: ☒ Yes ☐ No

If yes, describe source and nature of liquids:
water, liquid alum

Were the hazardous substances removed from the facility prior to demolition? ☐ Yes ☒ No

As verified by what documentation:

Work package 100 06 11 21 002. Hazardous substances were removed from the facility prior to demolition with the exception any potential hold-up of materials in Sump #1 (associated with the 163-N Building) sludge/water. Sump #1 was pumped, had the sludge removed and characterized for disposal, and was visually inspected to verify structural integrity prior to removal. Results of the inspection supported the conclusion that the sump did not leak water to the surrounding soil. The excavation was inspected for staining following sump removal. Sump #2 (also associated with the 163N Building) was left to be removed at a later date due to its' close proximity to the 100-N Export Water Line.

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition? ☐ Yes ☒ No ☐ N/A

References/Comments:

List any hazardous materials left in the building for demolition:

None in the building. There was potential for materials in Sump #2, which was removed by FR in 2011.

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?

No, materials were removed prior to demolition with exception of the Sump #2, which has been removed by FR.

Comments:

Sump #2 was left intact and removed by FR in 2011 because it fell within the 100-N-61:1 planned excavation boundary.

E. FIELD OBSERVATIONS

Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility? ☒ Yes ☐ No

References/Comments:

No stains were identified during an inspection of the facilities' excavation (CCN 138172). Several anomalies were discovered during the demolition process (CCN 140560 pgs. 6-7). However, the materials were either not in direct contact with the soil and did not pose a threat of release to the environment during demolition, were sampled and determined to be of benign nature, or were removed upon contact with the soil.

Were samples taken of the stained soils/anomalies? ☐ Yes ☐ No ☒ N/A

References/Comments:

Do results of the samples indicate that chemical contamination exists? ☐ Yes ☐ No ☒ N/A

References/Comments:

Is the area potentially a discovery site? ☐ Yes ☒ No

References/Comments:

No chemical contamination was identified.

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-002

Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination? ☐ Yes ☒ No

References/Comments:

GPERS surveys did not identify radiological contamination (ESR-FRM-07-0277 and ESR-FRM-07-0278). However, radiological contamination was discovered at the facility during the characterization process (CCN 140560 pgs. 4), the contamination was determined to be associated with NORM materials utilized in the water treatment process.

Were samples taken of the radiologically contaminated soils? ☐ Yes ☐ No ☒ N/A

References/Comments:

Multiple samples were taken of anomalies that contained radiological contamination and low levels of radiological contamination were detected in sampling results (CCN 140560 pgs. 6-7). However, the materials were determined to be NORM, were not in direct contact with the soil, and did not pose a threat of release to the environment during demolition.

Is the area potentially a discovery site? ☐ Yes ☒ No

References/Comments:

Were the contaminated materials removed? ☐ Yes ☒ No ☐ N/A

References/Comments:

Sump #2, and the materials within, (163N) was left to be removed by FR at a later date (CCN 140560 pg. 9).

F. WIDS SITES

Were there any WIDS sites affected by D4 activities? ☒ Yes ☐ No

If yes, list the WIDS sites:

124-N-1 (CCN 140560 pg. 6). The lid of the 124-N-1 septic tank was dislodged by a grader. The tank was later removed by D4 and will subsequently be closed out by FR.

Were the WIDS site(s) completely removed? ☐ Yes ☒ No

References/Comments:

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site? ☒ Yes ☐ No

References/Comments:

Only the 163N Sump #2 footprint will be closed out by FR (CCN 140560 pg. 6).

G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

☒ None ☐ SVOC ☐ VOC ☐ Metals ☐ TPH ☐ Rad ☐ PCBs

☐ Other (Specify): _____

Comments:

Summary of in-process soil sampling requirements:

Constituents detected / concentrations / rationale

Metals, mercury, and anions to be covered in FR verification sampling of 100-N-61. A focused sample will be collected by FR in Sump # 2 area. Sampling of 163N/183N and/or 183NA may be performed if the 100-N-61:1 excavation crosses the boundary of any of the buildings to chase contaminants. There is potential for sampling of 163N/183N if the 120-N-3 excavation boundary moves eastward in order to chase contaminants.

Sample Collection Summary

Consult pages 6-7 and 10-11 of CCN 140560 for a list of sample numbers taken at these facilities.

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-002

H. NOTES / ADDITIONAL INFORMATION

☒ Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):

183N/163N Demo and Disposition Meeting Minutes (CCN 130293)

I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?

☐ Yes ☒ No

Based on the above information it was determined that sampling: ☐ will ☒ will not be required in order to demonstrate that cleanup criteria have been met.

The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

Information Reviewer Signature

David Warren

Printed Name

David Warren

Date

5/1/12

The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature

RF Guerra

Printed Name

RF Guerra

Date

5/1/2012

Ecology Signature

Nina M. Menard

Printed Name

Nina M. Menard

Date

5/2/2012

WCH Washington Closure Hanford **Meeting Minutes**

130293

SUBJECT 183N, 163N Demo and Disposition Meeting

TO Distribution

FROM S. E. Killoy *SE Killoy*

DATE October 2, 2006

ATTENDEES

J. M. Ayres H0-57
F. W. Bond H0-57
S. E. Killoy X5-50
S. L. Lachmann X5-50
K. R. Westover A3-04

DISTRIBUTION

Attendees
J. W. Golden L1-04
R. R. Nielson X5-50
Records and Document Control H0-30

A meeting on the above subject was held on October 2, 2006, at the Washington State Department of Ecology Building in Richland, Washington. The intent of this meeting was to review WCH plans for demolishing and closing out the below grade portions of 183N, 163N and related ancillary structures including Sump #1, 183NB Clear Well and related flume, and the 183NC Backwash sump. This meeting was also intended to provide an overview of the process knowledge of the structures and to discuss WCH's plans to verify process knowledge through field screening (i.e., radiological surveys and visual inspection). A detailed list of structures discussed is included in the attached white paper.

Steve Killoy began the meeting by summarizing the intent of the meeting and that although the meeting was not intended to request approval of the strategy by RL or Ecology; it was intended to allow RL and/or Ecology to express any concerns based on discussions regarding the plan and to gain agreement on the approach.

Steve Killoy discussed the history of the structures, which structures were intended to be removed to three feet below grade, which structures were intended to be left in place, as well as structures intended for complete removal, as presented in the attached white paper. He also discussed in the case of each structure, based on process knowledge and available sample results, WCH's intent to perform radiological surveys and visual inspection to confirm process knowledge that soils underlying the structures is "clean" and/or that concrete being left in place is "clean." Two primary concerns were discussed, the potential for Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) in 183N and the 183NC Backwash sump, as well as Sump #1 and related water and sludge currently in the sump.

Steve Killoy indicated that sampling was performed to evaluate TENORM constituents in the coagulator sediment and sand filter media. TENORM constituents in the samples were non-detectable. The 183NC Backwash sump is down stream of this area in the process and would have had lower probability for these contaminants. As such, non TENORM issues are expected in the 183NC Backwash sump or other downstream areas.

Because of the history of Sump #1, the water in the sump will be removed and characterized for disposal to

the 200 Area Effluent Treatment Facility, the solids in the sump will be removed and characterized for disposal to the Environmental Restoration Disposal Facility, and prior to removal, the sump will be visually inspected for cracking that might indicate a potential for the sump to have leaked. Additionally, upon removal of the sump, the newly exposed surface of the concrete will be visually inspected for staining, as will the soil surface. If visual anomalies are detected, or significant cracking of the concrete is observed, the site will be identified as a potential new waste site and deferred. If no issues are identified the soil will be assumed to be free of chemical contamination and a radiological survey will be completed to support soil closure.

During discussion regarding Sump #1, both Rick Bond and Jeff Ayres noted a sentence in the white paper that read "Soils below the sump may be sampled if the area appears clean, but additional confidence is needed," and asked for clarification. Sarah Lachmann and Steve Killoy indicated that based on observation of the sump for cracking and of the concrete and soils for staining, a sample may be desired to support a conclusion that no leaks occurred. However, if it is evident from the visual exams that the concrete appears to be structurally sound, no sampling will be conducted. The sentence in question was revised to read as follows; "Soils below the sump may be sampled if visual examinations do not provide the necessary confidence of the sumps integrity."

Steve Killoy also pointed out that WCH intends to remove a chemical transfer trench that extends from what used to be 108N (previously removed) and 163N. This site was evaluated as a potential WIDS site and was rejected. However, as the trench is removed, the soils will be visually inspected for chemical staining.

Following discussions, Kent Westover, Rick Bond, and Jeff Ayres indicated agreement with the approach presented.

Additionally, Kent Westover recommended that in the future, when producing close out documentation for structure removals (i.e., Project Summary Report, etc) that the reports should include photos to document the visual inspection of the site.

At the end of the meeting, two side bar discussions were held:

1. Attendees discussed revision of the Map in DOE/RL-2002-70, *Removal Action Work Plan for 100-N Area Ancillary Facilities*, Revision 2 to expand the area identified as the Area of Contamination to include mobile offices and other structures approved by RL and Ecology to be included (added) in the removal action. RL and Ecology agreed that in lieu of a revision to the RAWP, which will be completed at a later time, a communication will be prepared requesting approval of a revised map that will be documented in the Unit Managers Meeting.

2. Attendees discussed applicability of the DOE/RL-2003-33, *100-N Ancillary Facilities and 190-DR Building Waste Characterization Sampling and Analysis Plan* to structures, including mobile offices and other structures, approved by RL and Ecology to be added to the removal action that have not yet been included to a revision of DOE/RL-2002-70. RL and Ecology agreed that these structures, having been approved to be within the scope of the removal action, are inherently approved within the scope of the SAP. Revision of the RAWP table 1-2, which is reference in the SAP, can occur in an annual review and update of the document.

If there are questions regarding these meeting minutes, please contact Steve Killoy at 373-5473.

Attachments(2)

Distribution
Page 4

Attachment 1

Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

1.0 Introduction

This document summarizes the proposed WCH D4 approach for demolition and verification of process knowledge for the 183N Water Treatment Plant and 163N Demineralization Plant at 100N. Process history and existing sample data for these facilities are provided to support the intended activities. The intent is to provide a graded and tailored approach for various parts of the facilities based on whether they are known to be clean or contaminated.

When approved, *100-N Area Sampling and Analysis Plan for CERCLA Waste Sites*, (DOE, 2006), will provide direction for close-out activities for soils underlying D4 facilities that are removed as well as below-grade concrete that will be left in place. This SAP is intended to provide direction for sampling required to demonstrate that below-grade concrete that will be left in place and/or soils beneath the facility footprint, believed to be contaminated or that have reasonable probability to be contaminated, meet cleanup standards. Soils and/or below-grade structures, believed to be "clean" because the facility was believed to be clean as a result of process history, sample data, and possibly other similar information, and did not have a history of spills or releases of contaminants to the environment do not fall within the scope of this SAP.

Based on historical information/process knowledge, as well as analytical data available for areas of the facility, there is currently no reason to believe that soils beneath the 183N, 163N, and related structures identified below have been contaminated with hazardous constituents above cleanup levels. Therefore, when demolition activities to remove the structures has been completed, radiological screening and visual examination of the underlying soils and the exposed surface of remaining below-grade concrete structures will be performed to verify the exposed soil surface is free of contamination. If radiological screening or visual examination identifies anomalies, the site will be characterized to determine the extent of contamination and the site may be identified as a potentially new waste site and will be investigated under the orphan waste site process.

2.0 Facility Process History

Collectively the 183N and 163N water treatment facilities and associated structures provided water of low suspended and dissolved solids for use as reactor coolant, boiler feed water, other process water, and domestic water. The 183N/163N complex included co-joined facilities, a pump house (183-NA), a clearwell (183-NB), chemical unloading facilities (108-N), and both named and unnamed sumps. Descriptions of a number of these facilities follow. See page 3 for facility plan view.

The 183-N Water Treatment Plant provided filtered water for N Reactor use, potable water, and for other services. The water treatment process consisted of the addition of liquid alum and aqueous chlorine to raw Columbia River water in a chemical mixing

Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

tank. Following the chemical addition step, the water solution flowed into settling basins where the added alum with suspended and dissolved solids in the raw water formed larger particles that settled by gravity. After passing through the coagulation basins, the water flowed into filters where a filter aid was added (Seperan). This filtered water was then transferred via the filter flume to the 200,000 gallon clearwell (183-NB). The clean potable water was stored in the clearwell, and then was distributed to various systems and facilities.

The 183-N Water Treatment Plant is a 20,700 ft², one-story, concrete masonry and steel sided building on a reinforced-concrete foundation. This square footage estimate covers the 183-N building up to its union with the 163-N building. The 183-N building consists of the Service Bay, the Chemical Treatment and Pipe Gallery Bay, the Coagulation Basin and Filters, and the Coagulator Drive Bay. The Coagulation Basin is also referred to as the Settling Basin.

The 163-N facility was used to demineralize and de-gas filtered water prior to storage in a 3.8 Mliter (1 Mgal) storage tank (the 1900-N "Demin Tank"). The building also housed auxiliary equipment to regenerate ion-exchange resins for the demineralization process and stored the needed chemicals.

The 163N facility is a single-story, high bay, steel frame building with corrugated metal siding supported on a reinforced concrete foundation. The facility measures approximately 92 ft by 100 ft and is physically adjacent to the 183N facility.

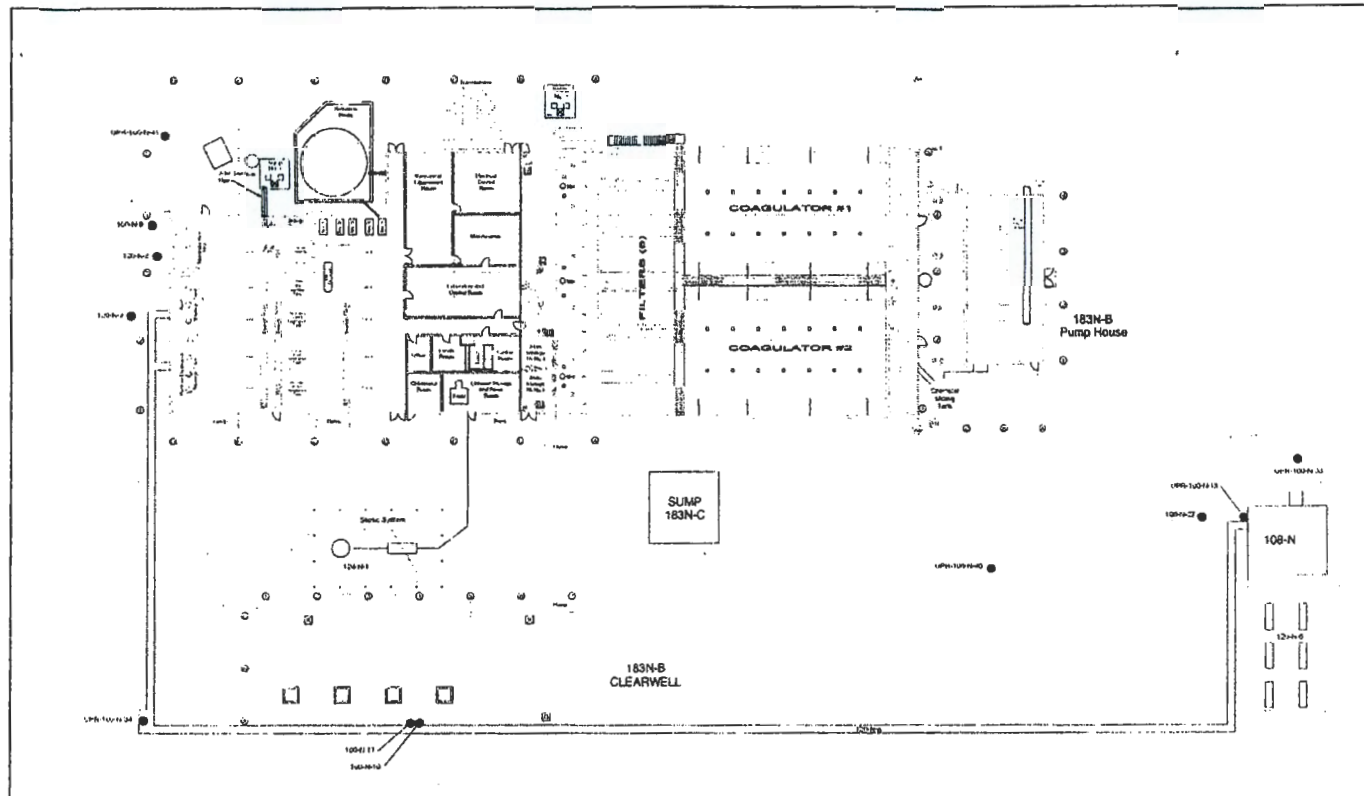
Both the 163N and 183N facilities were built in 1964. The 183-N is located approximately 500 feet south of the 109-N Building. The 163N facility is to the west of the 183N and is physically attached to it.

The 183-NA Pump House is a 2,100 ft², single-story, concrete masonry building with a reinforced-concrete panel roof. The facility housed the pumps for the 100-N process water and is located SE of the 183N.

The 183-NB Clear Well is a buried, rectangular-shaped, reinforced concrete water basin approximately 4787 ft² in area (120 ft long by 40 ft wide by 12 ft deep), with the top surface protruding approximately 1 ft above grade. Several pumps and associated control equipment are mounted on the top concrete surface. The 183-NB Clear Well is located to the SW of 183N/163N.

The 183-NC Filter Backwash Sump is a 770 ft² (27.7 ft by 27.7 ft), box shaped, reinforced-concrete sump with the top surface protruding approximately 3 ft above grade. The top surface is diamond plate steel. The facility was used to collect backwash water from the 183-N filter beds. The 183-NC sump is located SW of the 183N settling basins. The bottom of the Filter Backwash Sump extends to a depth of 13 feet below grade.

Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils



Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

UNI-M-94, *N-Reactor Plant Manual*, Provides a detailed description on the operation of the 183-N and 163-N facilities.

3.0 Demolition Activities and Facility Disposition

The current demolition plan is to demolish the primary 183N and 163N structure to three feet below grade, including the removal of the concrete slab. A number of structures are planned to be left in place as indicated below.

The concrete stem wall that is part of the foundation of 163N and the 183N service bay and piping gallery areas of 183N extends to depths of six to nine feet depending on location. The stem walls that extend lower than three feet below grade will be left in place.

Sump #1 is located just north of the 163N building. It served as drainage receipt for the network of drainage trenches in 163N. These areas in 163N contained ion exchange columns, a sulfuric acid tank, a sodium hydroxide tank, other process equipment and miscellaneous support instrumentation. During characterization sampling the fluids in Sump #1 were determined to contain chemical contaminants including sodium and a small amount of mercury. Therefore, the fluids in this sump will be removed; the sludge will be filtered and further characterized and managed appropriately. The walls of the sump will be visually inspected for signs of cracking or other damage that may have allowed leaking. Leaking in this sump is not expected; because the sump held liquid over periods of time long enough to indicate no significant leaks exist. The sump will then be removed completely. The soils will be visually inspected for staining and other signs of chemical deposits. Soils below the sump may be sampled if visual examinations do not provide the necessary confidence of the sumps integrity. Soil sampling will be determined on a case-by-case basis. If the sump is determined to have possibly leaked, the soils in the vicinity will be deferred to Field Remediation for further disposition. If no signs of leakage are evident, the excavation will be back filled with clean soil.

Sump #2 is located north of 183N, in close proximity to the newer and currently operational 186N water treatment facility. Removal of Sump #2 at this time would cause structural problems to the foundation of the 186N building. Due to the close proximity of Sump #2 to 186N, Sump #2 will be left in place and be removed as part of the demolition for 186N.

A chemical transfer trench runs from the 108N building to the west side of the 163N building. This trench served as the transfer trench for chemicals such as sulfuric acid and sodium hydroxide that were unloaded at the 108N building by rail car. In the past, chemical spilling occurred inside this trench, producing chemical staining on the inside of the concrete trench. The spill was chemically buffered and the trench flushed out. This

Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

site has been evaluated for contamination concerns as a potential WIDS site, and was rejected because it is not considered to be a hazardous waste site. See DOE/RL-95-111 for further detailed information. The trench will be completely removed and the soil inspected for staining.

The filter flume resides below the 183N Chemical Mixing and Piping Gallery. The filter flume received water from the sand filters after the completion of water treatment to produce potable water. The clean potable water moved from the sand filters and the end of the settling basins into the filter flume, then over a weir and directly into the 183NB Clearwell. Attempts were made to sample the water in the filter flume but were unsuccessful due to accessibility problems. However, the water in the filter flume is believed to be clean and free from contamination based on the following logic. The water in the settling basins upstream of the flume was tested and approved for use as dust suppression. The sludge in the settling basins was tested for radiological and inorganic constituents, and found not to be contaminated. The sand filter media immediately above the filter flume was tested for metals, radiological constituents, inorganics, and other COCs, and found not to be contaminated. The 183NC Clearwell water downstream of the filter flume was tested and found to be free of COC's and was approved for use as dust suppression. A limited portion of the interior of the Clearwell was visually inspected and determined not to contain sludge. The walls and floor of the Clearwell only showed signs of rust stains as expected and appeared to be in structurally good condition with no observations of cracking or other damage. Therefore, the floor of the Piping Gallery and Chemical Mixing Bay will be removed, and radiologically surveyed to ensure the area is clean from radiological contamination. The roof of the filter flume will be caved in and filled, leaving the below grade concrete in the filter flume in place.

The 183NB Filter Backwash Sump will be left in place. The water in the sump was tested and accepted for use as dust suppression. The water in the sump was pumped, and the interior of the sump walls and floor were visually inspected to look for staining and signs of cracking or sludge on the floor. No cracking, chemical staining, or sludge was observed. Minor amounts of iron (rust) staining were observed, and areas where the walls of the sump were in contact with rapidly flowing water during filter back washing showed typical signs of slightly exposed aggregate, as seen in many similar situations, including at the 181N River Water Low-Lift Pump House. In addition LARADS or GPERS will be conducted in the sump to verify no TENORM is present. The implications for the evident cleanliness of the 183NC Filter Back Wash Sump are two-fold. The demolition plan is to leave the concrete structure in place. Additionally, because the 183NC Filter Back Wash Sump is expected to provide the worst potential case for contamination at the 183N facility, and the evidence indicates it is clean, this supports the plans to leave the filter flume and 183NB Clearwell in place as well.

4.0 WIDS Sites

The following WIDS Sites are associated with or located near the 183-N and 163-N facilities:

Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

Table 1.1 Adjacent WIDS Sites	
WIDS Site	Description
100-N-62	Underground Pipelines
100-N-74	183N Fire System Drain
100-N-75	183N Fire System Relief Valve
100-N-9	120-N-5 Facility Liquid Unplanned Release
100-N-10	120-N-5 Facility Liquid Unplanned Release 2 (a.k.a., 120-N-5)
100-N-11	120-N-5 Transfer Trench Liquid Unplanned Release 3) (a.k.a., 120-N-5)
100-N-23	163N Resin Disposal Pit, Clearwell Overflow Sump
100-N-58	120-N South Settling Pond, site has been remediated and closed out
120-N-1	1324-NA Percolation Pond, site has been remediated
120-N-2	1324-N Surface Impoundment, site has been remediated
120-N-3	163N Neutralization Pit and French Drain
120-N-5	(a.k.a 100-N-9, -10 & -11, 108-N/163N Transfer Line and Neutralization Pit
120-N-8	163N Sulfuric Acid Tank Vent French Drain
124-N-1	100-N Sanitary Sewer System No. 1
130-N-1	183N Backwash Pond
UPR-100-N-34	108-N Tank Transfer, sulfuric acid line break
UPR-100-N-40	163N Cation/Anion Regeneration Waste Spill
UPR-100-N-41	163N Regeneration Transport System Liquid UPR 2, 163-N Regeneration, Waste Spill).

Of these sites, 100-N-23, 100-N-58, 120-N-1, 120-N-2, 130-N-1 are sufficiently removed from the 183N/163N facilities that disturbance during D4 activities is not intended to occur.

WIDS sites UPR-100-N-34, -40, and -41, 124-N-1, 100-N-74, and 100-N-75 are not likely to be disturbed by D4 activities (not within the potential excavation layback), but are located in the work zone.

WIDS site 120-N-3 will be protected for demolition by Field Remediation. The remaining WIDS sites (100-N-9, 100-N-10, 100-N-11, 120-N-5, and 120-N-8) have been rejected as described above and in DOE/RL-95-111.

Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

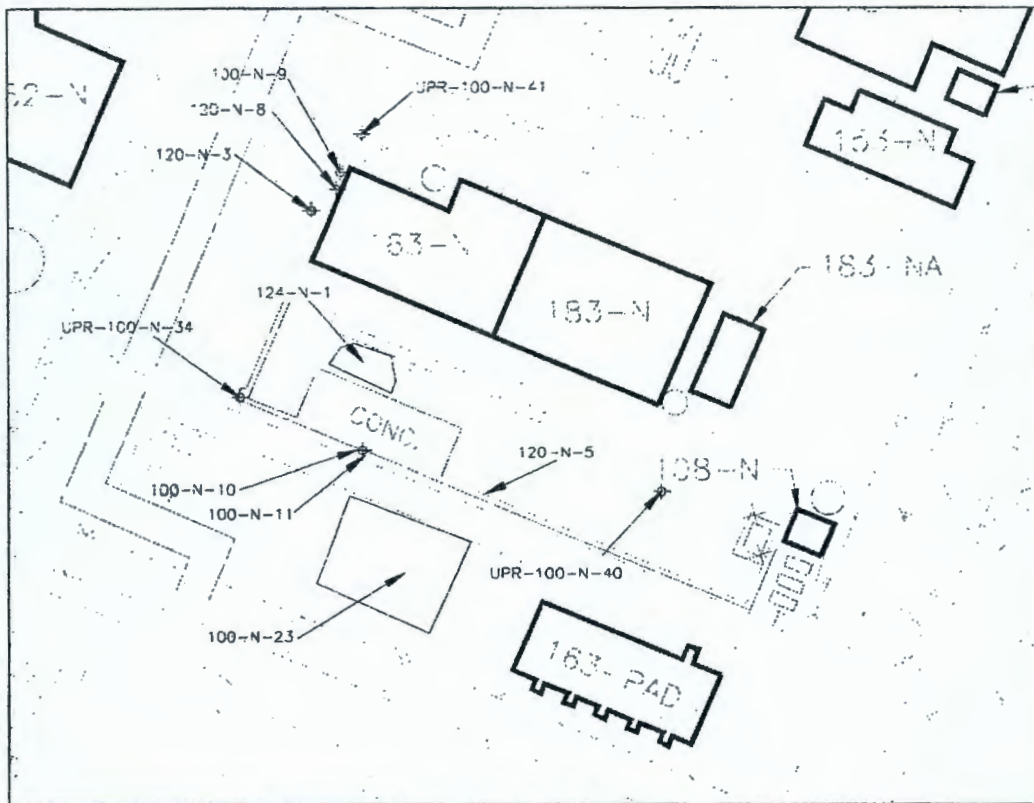


Figure 1.1, Adjacent WIDS Sites (163N Pad called 1330N)

5.0 Summary of D4 Activities

The planned demolition of the 183N/163N facilities is summarized in the following table, Table 5.1.

Table 5.1 Planned Scope of D4 Activities at 183N/163N		
Structure	Planned demolition	Method Used to Verify Process/ Historical Knowledge
183N, 183NA (includes flocculator drive bay, settling basins, pump house, chemical transfer bay, and service bay including office area and lab area)	Complete removal of structure, slab, and underlying soil up to 3 ft BG. Stem walls and footing greater than 3 ft BG will remain.	LARADS or GPERS
183N filtered water flume	Cave in flume top, leave in place	NA
183N Sump #2	Complete removal of	Not applicable to this scope

Verification of Process Knowledge for the 183N and 163N Facilities and
Underlying Soils

Table 5.1 Planned Scope of D4 Activities at 183N/163N		
Structure	Planned demolition	Method Used to Verify Process/ Historical Knowledge
	structure. Disposition to ERDF. Demolition will occur with deactivation of near-by facilities.	
183N Chemical Mix Tank	Complete removal of structure and underlying soil up to 3 ft BG. Disposition to ERDF.	LARADS or GPERS Visual for soil staining
183-NB Clearwell	Demolition to 3 ft BG, leave in place.	NA
183-NC Filter Backwash Sump	Demolition to 3ft BG. Verify attainment of clean closure criteria, leave in place.	Visual clean-closure evaluation. LARADS or GPERS
163N	Complete removal of structure and underlying soil up to 3 ft BG. Stem walls and footings greater than 3 ft BG will remain.	LARADS or GPERS Visual for soil staining
163N Sump #1	Complete removal of structure. Disposition to ERDF.	Visual examination of soils, sampling may be required Radiological screening NA

Distribution
Page 5

Attachment 2

**Email Concurrence from Rick Bond (Ecology PM), Jeff Ayres (Ecology),
and Kent Westover (DOE-RL PM)**

Killoy, Steve E

From: Bond, Rick (ECY) [FBON461@ECY.WA.GOV]
Sent: Monday, October 09, 2006 10:57 AM
To: Killoy, Steve E
Cc: Westover, Kent R; Ayres, Jeff
Subject: FW: 183N and 163N Demo and Disposition Meeting
Attachments: 183N 163N Demo and Disposition Paper 100906.doc; 183N and 163N Demo and Disposition Meeting.doc

Looks good to me with a few minor suggestions.

-----Original Message-----

From: Killoy, Steve E [mailto:steve.killoy@wch-rcc.com]
Sent: Monday, October 09, 2006 9:10 AM
To: Westover, Kent R; Bond, Rick (ECY); Ayres, Jeff
Cc: Lachmann, Sarah L; Yasek, Donna M; Nielson, Robert R
Subject: 183N and 163N Demo and Disposition Meeting

Kent, Rick, and Jeff;

I have attached draft meeting minutes of our meeting regarding 183N/163N as well as the paper that supported our discussions with a minor change to discussion regarding sump #1 as discussed in the meeting minutes. I would like to request your review of the meeting minutes to ensure I captured the meeting accurately and an email from you concurring with the meeting minutes or to provide comments/necessary clarifications or changes that you feel need to be made.

If you have any questions, please contact me.

Thanks.

Steve

10/10/2006

Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

1.0 Introduction

This document summarizes the proposed WCH D4 approach for demolition and verification of process knowledge for the 183N Water Treatment Plant and 163N Demineralization Plant at 100N. Process history and existing sample data for these facilities are provided to support the intended activities. The intent is to provide a graded and tailored approach for various parts of the facilities based on whether they are known to be clean or contaminated.

When approved, *100-N Area Sampling and Analysis Plan for CERCLA Waste Sites*, (DOE, 2006), will provide direction for close-out activities for soils underlying D4 facilities that are removed as well as below-grade concrete that will be left in place. This SAP is intended to provide direction for sampling required to demonstrate that below-grade concrete that will be left in place and/or soils beneath the facility footprint, believed to be contaminated or that have reasonable probability to be contaminated, meet cleanup standards. Soils and/or below-grade structures, believed to be "clean" because the facility was believed to be clean as a result of process history, sample data, and possibly other similar information, and did not have a history of spills or releases of contaminants to the environment do not fall within the scope of this SAP.

Based on historical information/process knowledge, as well as analytical data available for areas of the facility, there is currently no reason to believe that soils beneath the 183N, 163N, and related structures identified below have been contaminated with hazardous constituents above cleanup levels. Therefore, when demolition activities to remove the structures has been completed, radiological screening and visual examination of the underlying soils and the exposed surface of remaining below-grade concrete structures will be performed to verify the exposed soil surface is free of contamination. If radiological screening or visual examination identifies anomalies, the site will be characterized to determine the extent of contamination and the site may be identified as a potentially new waste site and will be investigated under the orphan waste site process.

2.0 Facility Process History

Collectively the 183N and 163N water treatment facilities and associated structures provided water of low suspended and dissolved solids for use as reactor coolant, boiler feed water, other process water, and domestic water. The 183N/163N complex included co-joined facilities, a pump house (183-NA), a clearwell (183-NB), chemical unloading facilities (108-N), and both named and unnamed sumps. Descriptions of a number of these facilities follow. See page 3 for facility plan view.

The 183-N Water Treatment Plant provided filtered water for N Reactor use, potable water, and for other services. The water treatment process consisted of the addition of liquid alum and aqueous chlorine to raw Columbia River water in a chemical mixing

WCH Washington Closure Hanford *Meeting Minutes*

SUBJECT 183N, 163N Demo and Disposition Meeting

TQ: Distribution

FROM S. E. Killoy

DATE October 2, 2006

ATTENDEES

J. M. Ayres H0-57
F. W. Bond H0-57
S. E. Killoy X5-50
S. L. Lachmann X5-50
K. R. Westover A3-04

DISTRIBUTION

Attendees
J. W. Golden LI-04
R. R. Nielson X5-50
Records and Document Control H0-30

A meeting on the above subject was held on October 2, 2006, at the Washington State Department of Ecology Building in Richland, Washington. The intent of this meeting was to review WCH plans for demolishing and closing out the below grade portions of 183N, 163N and related ancillary structures including Sump #1, 183NB Clear Well and related flume, and the 183NC Backwash sump. This meeting was also intended to provide an overview of the process knowledge of the structures and to discuss WCH's plans to verify process knowledge through field screening (i.e., radiological surveys and visual inspection). A detailed list of structures discussed is included in the attached white paper.

Steve Killoy began the meeting by summarizing the intent of the meeting and that although the meeting was not intended to request approval of the strategy by RL or Ecology; it was intended to allow RL and/or Ecology to express any concerns based on discussions regarding the plan and to gain agreement on the approach.

Steve Killoy discussed the history of the structures, which structures were intended to be removed to three feet below grade, which structures were intended to be left in place, as well as structures intended for complete removal, as presented in the attached white paper. He also discussed in the case of each structure, based on process knowledge and available sample results, WCH's intent to perform radiological surveys and visual inspection to confirm process knowledge that soils underlying the structures is "clean" and/or that concrete being left in place is "clean." Two primary concerns were discussed, the potential for Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) in 183N and the 183NC Backwash sump, as well as Sump #1 and related water and sludge currently in the sump.

Steve Killoy indicated that sampling was performed to evaluate TENORM constituents in the coagulator sediment and sand filter media. TENORM constituents in the samples were non-detectable. The 183NC Backwash sump is down stream of this area in the process and would have had lower probability for these contaminants. As such, non TENORM issues are expected in the 183NC Backwash sump or other downstream areas.

Because of the history of Sump #1, the water in the sump will be removed and characterized for disposal to

Deleted:

the 200 Area Effluent Treatment Facility, the solids in the sump will be removed and characterized for disposal to the Environmental Restoration Disposal Facility, and prior to removal, the sump will be visually inspected for cracking that might indicate a potential for the sump to have leaked. Additionally, upon removal of the sump, the newly exposed surface of the concrete will be visually inspected for staining, as will the soil surface. If visual anomalies are detected, or significant cracking of the concrete is observed, the site will be identified as a potential new waste site and deferred. If no issues are identified the soil will be assumed to be free of chemical contamination and a radiological survey will be completed to support soil closure.

During discussion regarding Sump #1, both Rick Bond and Jeff Ayres noted a sentence in the white paper that read "Soils below the sump may be sampled if the area appears clean, but additional confidence is needed." and asked for clarification. Sarah Lachmann and Steve Killoy indicated that based on observation of the sump for cracking and of the concrete and soils for staining, a sample may be desired to support a conclusion that no leaks occurred. However, if it is evident from the visual exams that the concrete appears to be structurally sound, no sampling will be conducted. The sentence in question was revised to read as follows: "Soils below the sump may be sampled if visual examinations do not provide the necessary confidence of the sumps integrity."

Steve Killoy also pointed out that WCH intends to remove a chemical transfer trench that extends from what used to be 108N (previously removed) and 163N. This site was evaluated as a potential WIDS site and was rejected. However, as the trench is removed, the soils will be visually inspected for chemical staining.

Following discussions, Kent Westover, Rick Bond, and Jeff Ayres indicated agreement with the approach presented.

Additionally, Kent Westover recommended that in the future, when producing close out documentation for structure removals (i.e., Project Summary Report, etc) that the reports should include photos to document the visual inspection of the site.

At the end of the meeting, two side bar discussions were held:

1. Attendees discussed revision of the Map in DOE/RL-2002-70, *Removal Action Work Plan for 100-N Area Ancillary Facilities*. Revision 2 to expand the area identified as the Area of Contamination to include mobile offices and other structures approved by RL and Ecology to be included (added) in the removal action. RL and Ecology agreed that in lieu of a revision to the RAWP, which will be completed at a later time, a communication will be prepared requesting approval of a revised map that will be documented in the Unit Managers Meeting.

2. Attendees discussed applicability of the DOE/RL-2003-33, *100-N Ancillary Facilities and 190-DR Building Waste Characterization Sampling and Analysis Plan* to structures, including mobile offices and other structures, approved by RL and Ecology to be added to the removal action that have not yet been included to a revision of DOE/RL-2002-70. RL and Ecology agreed that these structures, having been approved to be within the scope of the removal action, are inherently approved within the scope of the SAP. Revision of the RAWP table 1-2, which is reference in the SAP, can occur in an annual review and update of the document.

If there are questions regarding these meeting minutes, please contact Steve Killoy at 373-5473.

Attachment

Killoy, Steve E

From: Ayres, Jeff [JAYR461@ECY.WA.GOV]
Sent: Monday, October 09, 2006 11:02 AM
To: Killoy, Steve E; Westover, Kent R; Bond, Rick (ECY)
Cc: Lachmann, Sarah L; Yasek, Donna M; Nielson, Robert R
Subject: RE: 183N and 163N Demo and Disposition Meeting

These look OK to me.

Thanks

Jeff Ayres

From: Killoy, Steve E [mailto:steve.killoy@wch-rcc.com]
Sent: Monday, October 09, 2006 9:10 AM
To: Westover, Kent R; Bond, Rick (ECY); Ayres, Jeff
Cc: Lachmann, Sarah L; Yasek, Donna M; Nielson, Robert R
Subject: 183N and 163N Demo and Disposition Meeting

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If you have any questions, please contact me.

Thanks.

Steve

10/10/2006

Killoy, Steve E

From: Westover, Kent R [Kent_R_Westover@RL.gov]
Sent: Thursday, October 12, 2006 7:17 AM
To: Killoy, Steve E
Subject: RE: 183N and 163N Demo and Disposition Meeting

I'm okay with this.

Thanks, Kent Westover

From: Killoy, Steve E [mailto:steve.killoy@wch-rcc.com]
Sent: Tuesday, October 10, 2006 6:39 AM
To: Westover, Kent R
Subject: FW: 183N and 163N Demo and Disposition Meeting

Kent,

Have you had a chance to review the documents I sent?

Steve Killoy
100N D4 Environmental Lead

509.373.5473 (Hanford)
509.727.7804 (Cell)
509.946.8279 (Office)

From: Ayres, Jeff [mailto:JAYR461@ECY.WA.GOV]
Sent: Monday, October 09, 2006 11:02 AM
To: Killoy, Steve E; Westover, Kent R; Bond, Rick (ECY)
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10/16/2006

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Thanks.

Steve

10/16/2006